apparently not reported up to 151 US ? 145 U 8655

Lacks Fuller's brief for Def in error

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1891.

No. 239.

THE SYRACUSE CHILLED PLOW COMPANY, APPELLANT,

vs.

J. S. ROBINSON AND E. C. ROBINSON.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF NEW YORK.

FILED OCTOBER 13, 1888.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1891.

No. 239.

THE SYRACUSE CHILLED PLOW COMPANY, APPELLANT,

vs.

J. S. ROBINSON AND E. C. ROBINSON.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF NEW YORK.

INDEX.

	Original.	Print
Statement	1	1
Bill of complaint	3	1
Order for subpœna	10	5
Subpœna	11	5
Appearance	12	6
Order for appearance	13	6
Answer	14	6
Replication	20	9
Final decree	21	10
Affidavit for extension of time to take testimony	23	11
Order extending time to take testimony	26	12
Complainant's testimony	27	12
Offers in evidence	27	12
Testimony of Samuel C. Bonker	28	13
Bernard T. Dunne	37	18
Stipulation as to Patent Office copies	39	19
Testimony of Charles H. Brigham	41	20
Harry Wiard	43	21
Edward Wilhelm	48	24
Examiner's certificate	54	28
Testimony of James L. Judd	55	28
Harry Wiard	58	29
Examiner's certificate	74	38

JUDD & DETWEILER, PRINTERS, WASHINGTON, D. C., SEPTEMBER 15, 1891.

	Original.	Print.
Complainant's exhibits	75	39
Exhibit 1—Judd patent, No. 231,810, August 31, 1880	75	39
2—Judd assignment, December 27, 1880	78	40
3—Hall assignment, December 22, 1881	80	41
4—Robinson invoice	85	44
6—Robinson circular	85	44
7—Robinson letter, letter to C. H. & E. D. Brigham, March 19, 1886	87	46
Defendants' testimony	88	46
Stipulation for examiner	88	46
Offers in evidence	89	47
Testimony of Lewis B. White	91	48
Henry L. Cummings	106	57
Lewis B. White (redirect)	108	58
William J. Mack	117	64
John T. Moxley	126	69
Truman V. Fox	131	72
George Whitbeck	136	75
Rufus F. Osgood	138	76
John C. Whiting	164	92
Rufus F. Osgood (cross-examination)	167	93
Examiner's certificate	172	97
Defendants' exhibits	174	97
Judd file-wrapper and contents, patent No. 231,810	174	97
Chandler patent, No. 193,925, August 7, 1877	184	102
Benton patent, No. 142,074, August 26, 1873	186	104
White patent, No. 164,952, June 29, 1875	188	105
White file wrapper and contents, patent No. 164,952	191	107
Themar patent, No. 115,543, May 30, 1871	204	117
Hall patent, No. 220,373, October 17, 1879	206	118
Dennis reissue, No. 1515, August 4, 1863	208	119
Chenoweth patent of March 17, 1834	211	122
Utley patent, No. 78339, May 26, 1868	213	123
Brinley patent, No. 140,004, June 17, 1873	215	124
Watson letter, July 17, 1875	217	126
White letter, July 24, 1875	219	127
Stipulation as to exhibits	220	127
Opinion	221	128
Appeal and allowance	225	130
Bond	228	131
Citation	230	132
Clerk's certificate	231	132

1 *Statement.*

United States Circuit Court, Northern District of New York.

THE SYRACUSE CHILLED PLOW COMPANY *versus* J. S. ROBINSON and E. C. ROBINSON. } In Equity. Docket No., 5641.

The complainant in the above-entitled cause filed its bill of complaint against the defendant- herein on the 7th day of July, 1887; which bill is hereto annexed.

A subpœna to appear and answer in said cause was thereupon issued and served personally upon the defendant- previous to the return day thereof; which subpœna and proof of service thereto are hereto annexed.

On the 14th day of July, 1887, the defendant- duly appeare- in said cause, by George B. Selden as their solicitor, and on the 20th day of August, 1887, filed their answer to the bill of complaint herein; which answer is hereto annexed.

On the 26th day of August, 1887, the complainant filed its replication to the said answer; which replication is hereto annexed.

Testimony was thereafter taken by and on behalf of the respective parties, and on the 19th day of June, 1888, the said cause was brought to a hearing and argued by counsel upon pleadings and proofs before the Honorable Alfred C. Coxe at a term of this court held at Canandaigua.

A decision was duly made by said court in favor of the defendants and filed herein the 10th day of July, 1888.

2 That thereafter and on the 31st day of August, 1888, the defendants' costs and disbursements were duly taxed and adjusted by the clerk of this court at $330.89.

On the 17th day of July, 1888, at a term of this court held at Utica—present, the Honorable Alfred C. Coxe, judge—a final decree was made and entered in the said cause; which final decree is hereto annexed.

3 *Bill of Complaint.*

Circuit Court of the United States for the Northern District of New York. In Equity.

THE SYRACUSE CHILLED PLOW COMPANY *against* J. S. ROBINSON & E. C. ROBINSON, of the Firm of J. S. Robinson & Son. }

The Syracuse Chilled Plow Company, a corporation existing in due form of law in the State of New York and doing business in the city of Syracuse, Onondaga county and State of New York, bring this their bill into this court against J. S. Robinsen and E. C. Rob-

inson, citizens of the State of New York and doing business
4 in the firm name of J. S. Robinson and Son in the town of Canandaigua, Ontario county, State of New York.

And thereupon your orator complains and says on information and belief that James L. Judd, of Syracuse, New York, before and at the time of this application for the hereinafter-named letters patent was a citizen of the United States, and was the true, original, and first inventor of a certain new and useful apparatus, fully described in the specification of the letters patent hereinafter mentioned, and named herein a "plow," and which was not known or used in this country and not patented or described in any printed publication in this or any foreign country before his invention thereof, and was not in the public use or on sale more than two years prior to this applications for letters patent of the United States therefor.

And your orator further shows unto your honors on information and belief that on the 21st day of June, 1880, and before the issuing of the hereinafter-mentioned letters patent, the said James L. Judd, by an instrument in writing duly executed and delivered by him, bearing date on the last-named day, did assign to Harry Wiard, of Syracuse aforesaid, one undivided one-half part of all his right, title, and interest in said invention, with a request to the Commissioner of Patents to issue the patent to himself and the said Harry Wiard, and that said instrument in writing was duly recorded in the Patent Office on the 26th day of June, 1880.

And your orator further shows on information and belief that on the thirty-first day of August, 1880, letters patent for said invention in due form of law were, on the application of said James
5 L. Judd, issued and delivered to himself and Harry Wiard, as assignee of one-half interest therein, in the name of the United States of America and under the seal of the Patent Office of the United States, and were signed by the Secretary of the Interior of the United States and countersigned by the Commissioner of Patents; and the said letters patent did grant to the said James L. Judd and Harry Wiard, their heirs and assigns, for the term of seventeen years, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof.

And your orator further shows that the said James L. Judd, on the 27th day of December, 1880, by a certain instrument in writing duly executed by him and bearing date on said last-mentioned day, did grant to your orator his entire right, title, and interest in and to the then unexpired portion of the term of said letters patent, and that said instrument in writing was recorded in the United States Patent Office on the 10th day of January, 1881.

And your orator further shows that the said Harry Wiard, on the 2nd day of December, 1881, by *by* a certain instrument in writing duly executed by him and bearing date on the last-mentioned day, did grant to your orator his entire right, title, and interest in and to the then unexpired portion of the term of said letters patent, and that said instrument in *in* writing was recorded in the United States Patent Office on the 27th day of January, 1882.

And your orator further shows on information and belief that the said defendants on — after the 2nd day of December, 1881, and up to the time of the commencement of this action and dur-
6 ing and within the term of seventeen years mentioned in said letters patent, and within the United States of America, unlawfully, wrongly, and injuriously, and with intent to derive profits from making, using, and vending said apparatus and to deprive your orator of the profits of making and selling the part of said invention and specimens thereof, and without the license of your orator or of the said James L. Judd or Harry Wiard, and against the will of your orator, did make and did sell and did use and did cause to be made and caused to be sold and used sundry specimens of the patented device aforesaid and plows or parts of plows which contained and employed substantially the invention covered by said letters patent and granted by the said James L. Judd and Harry Wiard severally to your orator, as herein set forth, but how many such specimens so made, used, and sold or caused to be made, used, and sold your orator is ignorant and cannot set forth; but your orator avers, on information and belief, that the defendants so made and used and sold and caused to be made, used, and sold a large number thereof, from which they derived large profits, but to what amount your orator is ignorant and cannot set forth, and that your orator has been deprived of large sales and profits by reason of the infringement of the defendants and has thus incurred large damages thereby.

And your orator further shows that it fears and has reason to fear that unless the defendants are restrained by a writ of injunction issuing out of this court they will continue to make, use, and sell numbers of specimens of said apparatus and thereby will cause irreparable injury to your orator's aforesaid exclusive right.
7 And your orator prays your honors to grant unto your orator a preliminary and also a permanent writ of injunction, issuing out of and under the seal of this honorable court, directed to the said J. S. Robinson and E. C. Robinson, doing business under the firm name of J. S. Robinson & Son, and to each of them and their agents and employees, not to make or use or sell nor cause to be made or used or sold any specimen of apparatus or piece to be used in the combination covered and secured by the said letters patent.

And your orator further prays that the defendant-, by a decree of this court, be compelled to pay over to your orator all the profits which the defendants have derived or shall have derived from any making, using, or selling of any specimens of the invention or any part thereof secured by said letters patent, and also that the defendants may be decreed to pay all damages which your orator has incurred or shall have incurred on account of the defendants' infringement of said letters patent, and also that the defendants *infringement of said letters patent, and also that the defendants* be decreed to pay the costs of this suit, and that *the defendants be decreed to pay the costs of this suit, and that* your orator may have such further and other relief

12 *Appearance.*

United States Circuit Court, Northern District of New York. In Equity.

THE SYRACUSE CHILLED PLOW CO.
against
J. S. ROBINSON and E. C. ROBINSON. } No. 5641.

The clerk of this court will please enter my appearance as solicitor for the defendant- in the above-entitled cause.

Dated Rochester, July 13, 1887.

GEO. B. SELDEN,
Solicitor for Def'ts.

To William S. Doolittle, Utica, N. Y.

Indorsed: Precept for appearance. Filed Jul- 14, 1887. W. S. Doolittle, clerk.

13 *Order.*

In the Circuit Court of the United States for the Northern District of New York.

UTICA, *July* 14, 1888.

Present: Hon. W. J. Wallace, judge.

SYRACUSE CHILLED PLOW CO.
vs.
J. S. BOBINSON and E. C. ROBINSON. } 5641.

On filing præcipe in this cause and on motion of George B. Selden—

Ordered that his appearance as solicitor for the defendants herein be, and the same is hereby, entered, and that this cause be now docketed for said defendants.

14 *Answer.*

United States Circuit Court, Northern District of New York. In Equity.

SYRACUSE CHILLED PLOW COMPANY
against
JOHN S. ROBINSON and EDSON C. ROBINSON. } No. 5641.

The joint and several answer of the defendants, John S. Robinson and Edson C. Robinson, to the bill of complaint of the above-named complainant.

These defendants, now and at all times hereafter saving and reserving to themselves all and all manner of benefit and advantage

of exception which can or may be had or taken to the many errors, uncertainties, and insufficiencies in the said complainant's said bill of complaint contained, for answer thereunto or unto so much and such parts thereof as these defendants are advised is or are material or necessary for them to make answer unto, answer and say—

That they have been informed and believe that letters patent of the United States No. 231,810 were issued to James L. Judd and Harry Wiard on the 31st day of August, 1880, for improvements in plows, on the application of the said Judd, but these defendants say that they do not know and are not informed, save by said bill of complaint, whether or not said Judd did properly make application for the said patent and did comply with all the requirements of law and did have said patent issued in due form of law, and they leave the complainant to make such proof thereof as it may be advised.

15 And these defendants, further answering, say that they do not know and are not informed, save by said bill of complaint, whether or not the said Judd or the said Wiard at any time assigned to the complainant herein their entire or any interest in the said alleged invention and letters patent, and they leave the complainant to make such proof thereof as it may be advised.

And these defendants, further answering on information and belief, deny that by virtue of said patent or assignments the said Judd or Wiard or the said complainant ever became or were possessed of or vested with any exclusive right to make, use, or sell the said alleged invention described in said letters patent.

And these defendants, further answering, deny that the said Judd was the first and original inventor of the alleged improvements described and claimed in said letters patent, or any of the said improvements, or any substantial or material part thereof, claimed as new, but they aver that the same, prior to the alleged invention thereof by the said Judd, had been patented and fully set forth and described in the following letters patent of the United States, viz:

L. B. White, No. 164,952, June 29, 1875.
B. F. Chandler, No. 193,923, Aug. 7, 1877.
Odell & Little, No. 109,929, Dec. 6, 1870.
Chenoweth, No. ——, Mar. 7, 1834.
Benton, No. 142,074, Aug. 26, 1873.
Themar, No. 115,543, May 30, 1871.
Dennis, No. 19412, Feb. 23, 1858.
Dennis, reissue No. 1515, Aug. 4, 1863.

16 And these defendants, further answering on information and belief, deny that the said Judd was the first and original inventor of the alleged improvements described and claimed in the said letters patent, or any of said improvements, or any substantial or material part thereof, claimed as new, but they aver that the same, prior to the alleged invention thereof by the said Judd, had been publicly known and used by the following-named persons at the following-mentioned places, to wit:

L. B. White and S. B. White, who now reside at Norfolk, Virginia, at said Norfolk and elsewhere in the United States.

Bishop Lamport, of Canandaigua, N. Y., at said Canandaigua and elsewhere.

John S. and Edson C. Robinson, of Canandaigua, N. Y., at said Canandaigua and elsewhere.

Gale M'f'g Co. of Albion, Michigan, at said Albion and elsewhere.

Wiard Plow Co., of Batavia, N. Y., at said Batavia, N. Y., and elsewhere.

C. H. Sheffer, of Shortsville, N. Y., at Shortsville, N. Y., and elsewhere.

Chas. T. Palmer, of Richmond, Va., at said Richmond and elsewhere.

H. J. Williamson, of Norfolk, Va., at said Norfolk and elsewhere.

John T. Moxley, of Norfolk, Va., at said Norfolk and elsewhere.

17 And these defendants, further answering on information and belief, say that, in view of the state of the art in question as that art existed at the time the said Judd is supposed to have made the said alleged invention, and as shown by the prior patents hereinbefore cited, and as known and practiced by the parties mentioned herein at said time, the said letters patent are null and void and of no legal effect as not embodying or disclosing a patentable invention, and these defendants aver and will maintain that the said alleged invention was the mere product of mechanical skill, and that the said letters patent are therefore wholly null and void.

And these defendants, further answering, deny that since the said second day of December, 1881, or at any other time or at any place whatever, they have made or sold or used or caused to be made or sold or used any specimens of the patented devices aforesaid or any plows or any parts of plows containing or employing the said invention described and claimed in or covered by the said letters patent, and they deny that they have at any time in any way infringed on the said letters patent, and they deny that they have derived large or any profits thereform, and that the said complainant has been deprived of large or any sales or profits by any act of the said defendants, or has thus incurred large or any damages thereby.

And these defendants, further answering, in reply to the special interrogatories annexed to the said bill of complaint, say:

1. They deny that after the said second day of December, 1881, or at any other time, they made or used anywhere in the
18 said northern district of New York or elsewhere any specimen of plow points or any apparatus to be used in combination with the plow containing or embodying the inventions described and claimed in the said letters patent or any of the said inventions.

2. They deny that after the said second day of December, 1881, or at any other time they sold or caused to be sold any specimens of plow points made to fit the plows manufactured by the complainant herein and covered and secured by the said letters patent.

And these defendants, further answering, deny that the said com-

plainant is entitled to any relief or any part thereof in the said bill of complaint demanded.

And these defendants, further answering, deny that they have done anything contrary to equity or good conscience or tending to the injury of the complainants herein; without this, that any other matter, cause, or thing in the said complainants' said bill of complaint contained material or necessary for these defendants to make answer unto and not herein and hereby well and sufficiently answered, confessed, traversed, and avoided or denied is true to the knowledge or belief of these defendants; all which matters and things these defendants are ready and willing to aver, maintain, and prove as this honorable court shall direct, and humbly pray to be hence dismissed with their reasonable costs and charges in this behalf most wrongfully sustained.

JOHN S. ROBINSON.
EDSON C. ROBINSON.

GEO. B. SELDEN,
Def'ts' Sol'r, Rochester, N. Y.

19 UNITED STATES OF AMERICA, } ss:
Northern District of New York, Ontario County, }

Edson C. Robinson, being duly sworn, deposes and says that he is one of the defendants named in the foregoing answer subscribed by him; that he has read the same and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters therein stated on information and belief, and as to these matters he believes it to be true.

EDSON C. ROBINSON.

Subscribed and sworn before me this 18th day of Aug., 1887.

L. C. HALL,
[L. S.] *Notary Public in & for Ontario Co., N. Y.*

(Indorsed:) Answer. Filed Aug. 20, 1887. W. S. Doolittle, clerk.

20 *Replication.*

Circuit Court of the United States for the Northern District of New York.

THE SYRACUSE CHILLED PLOW COMPANY }
vs. } No. 5641. In Equity.
JOHN S. ROBINSON and EDSON C. ROBINSON. }

This repliant, saving and reserving unto himself all and all manner of advantage of exception to the manifold insufficiencies of the said answer, for replication thereunto saith that he will aver and prove his said bill to be true, certain, and sufficient in law to be answered unto, and that the said answer of the said defendant- is uncertain, untrue, and insufficient to be replied unto by this repliant; without this, that any other matter or thing whatsoever in the said

answer contained material or effectual in the law to be replied unto confessed and avoided, traversed or denied, is true; all which matters and things this repliant is and will be ready to aver and prove as this honorable court shall direct, and humbly pray- as in and by *their* said bill *they* have already prayed.

J. J. GREENOUGH,
Solicitor for the Complainant.

Indorsed: Replication. Filed Aug. 27, 1887. W. S. Doolittle, clerk.

21 *Final Decree.*

United States Circuit Court, Northern District of New York. In Equity.

SYRACUSE CHILLED PLOW COMPANY
against
JOHN S. ROBINSON and EDSON C. ROBINSON. } No. 5641.

At a term of the circuit court of the United States of America for the northern district of New York, in the second circuit, held at Utica, on the 17th day of July, 1888.

Present: Hon. A. C. Coxe, judge.

This cause having come on to be heard upon the bill of complaint herein, the answer thereto of the defendants, the replication of the complainant to such answer, and the proof—oral, documentary, and written—taken and filed in said cause, and having been argued by counsel for the respective parties—

Now, therefore, on consideration thereof, it is ordered, adjudged, and decreed, and the court doth hereby order, adjudge, and decree, that the complainant's said bill of complaint be, and the same is hereby, dismissed, with costs to the defendants, to be taxed.

ALFRED C. COXE.

(Indorsed): Decree dismissing bill. Filed Jul- 17, 1888. W. S. Doolittle, clerk.

That thereafter & on August 31st, 1888, defendants' costs were duly taxed by the clerk in the sum of $330.89.

22 Whereupon the said pleadings, process, orders, and final decree, together with other papers in said cause, are duly annexed hereto, and this decree is duly enrolled this 31st day of August, 1888, at 10 o'clock in the forenoon.

W. S. DOOLITTLE, *Clerk.*

(Indorsed on cover:) Equity. No. 5641. United States circuit court, northern district of New York. Syracuse Chilled Plow Company *vs.* John S. Robinson and Edson C. Robinson. Enrolled decree. Geo. B. Selden, sol'r for defendants. Costs, $330.89. Filed and entered August 31, 1888, at 10 o'clock a. m. W. S. Doolittle, clerk.

23 *Affidavit for Extension.*

United States Circuit Court, Northern District of New York.

THE SYRACUSE CHILLED PLOW COMPANY
vs.
J. S. & E. C. ROBINSON.

ONONDAGO COUNTY, *ss:*

J. J. Greenough, being duly sworn, says he is solicitor for the above-mentioned plaintiff; that this action is brought for the purpose of determining the validity of a certain patent and for an injunction against the defendant- restraining the use thereof.

That the said cause was at issue on or about September 1st, 1887, and soon thereafter plaintiffs introduced their *prima facie* case; that the defendants did nothing in the way of taking testimony in the said case until February 14th, 1888.

That defendants' counsel, George B. Selden, of Rochester, N. Y., asked and obtained from plaintiff's counsel repeated extensions of time for the taking of testimony, and on February 14th a stipulation was entered into providing that defendants' counsel should have a certain time in which to conclude his testimony and the plaintiff's counsel should have fifteen days thereafter in which to introduce rebutting testimony.

That said 15 days will expire on March 4th, 1888.

That a very important witness for plaintiff is Edward Wilhelm,
of Buffalo, who has already given some evidence for the plain-
24 tiff as an expert; that during the last week plaintiff learned by a letter from the said Edward Wilhelm that it would be impossible for him to appear before the 8th day of March for further examination; that deponent has caused to be written to Mr. Selden, of Rochester, two letters stating the facts aforesaid and asking a short additional time in which to introduce their rebutting testimony, but the said Selden for some reason neglects to answer the letters.

That attached hereto is the letter of Mr. Wilhelm, showing when he will be able to appear as a witness; that for the above reason plaintiffs will be unable to conclude their case until on or about the 12th day of March, and deponent therefore asks an order of this court allowing additional time in which to introduce their rebutting testimony.

That there has been no former application here or elsewhere for the relief herein asked.

J. J. GREENOUGH.

Subscribed and sworn to before me this 27th day of February, 1888.

S. F. BECKWITH.
Justice of the Peace.

25 BUFFALO, N. Y., *Feb.* 23, 1888.

E. C. Wright, Esq., counselor-at-law, Syracuse Savings Bank building, Syracuse, N. Y.

DEAR SIR: Yours of yesterday received. I would gladly testify in your case next week if I could, but it is impossible, as my time is fully engaged. I have an engagement at New York for March 5th, and cannot say at this writing how many days that will occupy. I can testify in your case immediately after getting through there, so that you may count on my being able to testify between March 8th and 10th. This is the earliest date I can name now.

Yours truly, EDWARD WILHELM.

Indorsed: Affidavit for extension. Filed Feb. 28, 1888. W. S. Doolittle, clerk.

26 *Order Extending Time.*

At a term of the circuit court held at Utica on February 28th, 1888, for the northern district of New York.

Present: Hon. A. C. Coxe, judge.

THE SYRACUSE CHILLED PLOW COMPANY
vs.
J. S. & E. C. ROBINSON.

On reading and filing the affidavit of J. J. Greenough, solicitor for the plaintiff herein, and, on motion of J. J. Greenough, it is—

Ordered that the plaintiff have until March 20th, 1888, in which to introduce rebutting testimony herein.

ALFRED C. COXE.

Indorsed: Order. Filed Feb. 28, 1888. W. S. Doolittle, clerk.

27 *Complainant's Testimony.*

United States Circuit Court, Northern District New York.

SYRACUSE CHILLED PLOW COMPANY
against
JOHN S. ROBINSON and EDSON C. ROBINSON. } In Equity.

Proceedings on behalf of complainant, at Syracuse, in said district, on the 7th day of August, 1887, before D. F. Gott, examiner.

J. J. Greenough, Esq., & E. C. Wright, for complainants; Mr. Selden, for defendants.

Complainants offer in evidence:

1. Letters patent to James L. Judd and Harry Wiard, dated August 21st, 1880.

Plaintiff's Ex. 1.

28 2. James L. Judd assignments to complainants of one-half interest *interest* in patent marked Plaintiff's Ex. 1.

Plaintiff's Ex. 2.

3. Assignments of executors of Levi W. Hall, Harry Wiard, and others to Syracuse Chilled Plow Company of one-half interest in patent Exhibit 1, letters patent 231,810.

SAMUEL C. BONKER, being duly sworn for complainants, testified as follows:

Q. 1. Mr. Bonker, what is your name, residence, and occupation?

A. 1. My name is Samuel C. Bonker. I reside in Auburn; am a farmer; also deal in farmers' supplies in the city of Auburn.

Q. 2. What firm are you a member of?

A. 2. White, Bonker & Hager.

Q. 3. Reside where?

A. 3. In Auburn.

Q. 4. In what kind of supplies are your firm dealers?

A. 4. We deal in general farm implement and farm supplies of almost every character.

Q. 5. Are you acquainted with the firm of J. S. & E. C. Robinson? What is the name of the firm—composed of what members?

A. 5. I cannot tell you. J. S. & E. C. Robinson, I suppose.

Q. 6. During the spring of 1885, do you remember having a conversation with either J. S. or E. C. Robinson at your store in Auburn?

Objected to by Mr. Selden as irrelevant and immaterial.

29 Q. 7. Do you remember the conversation, Mr. Bonker?

A. 7. I do.

Q. 8. Which one of the Robinsons was it?

A. 8. J. S. Robinson.

Q. 9. He is the father?

A. 9. I suppose so.

Q. 10. What was the conversation?

A. 10. Well, sir, I do not know as I can remember any portion of it. In was in regard to some castings that fitted the No. 1 of 1878, and also fitted the No. 8 and new No. 1 of 1878 plows. I think—I know that I asked him how he accomplished it. He said he did it by thinning it down, and showed me there, with a point, just exactly what he did with it.

Q. 11. Did he have a point there?

A. 11. We had lots of them.

Q. 12. He did not show you one of those that fitted onto the No. 8 plow at that time?

A. 12. No, sir; he did not. He merely took a point we had there and marked the changes on that number.

Q. 13. That was all?

A. 13. Yes, sir.

Q. 14. As a result of that conversation did you give him an order?

A. 14. I either gave him the order that day or wrote the order afterwards. I think I ordered some 200 points that day; am not certain.

Q. 15. Did you order any points that day for the No. 8 plow?
A. 15. Yes, sir; we did.
Q. 16. Shortly after that, did these points come from his place?
30 A. 16. He shipped us some points soon after that, I think.
Q. 17. The first points that he sent you, can you tell me whether they fitted the number 8 plow?
A. 17. I think not, sir.
Q. 18. Did you then write him a letter?
A. 18. I did.
Q. 19. As a result of that letter, did you receive this bill of plow points?
A. 19. Yes, sir.

Mr. Wright here asks:

Q. 20. Mr. Selden, is there any doubt about the handwriting?

Mr. Selden says:

A. 20. I do not think there is.

Bill was here offered in evidence—Plaintiff's Exhibit No. 4.

Mr. SELDEN: All previous testimony of this witness and Plaintiff's Exhibit No. 4 objected to as irrelevant and immaterial.

Q. 21. Mr. Bonker, when these points arrived, about March 31st, can you tell whether these points that came in that order, as contained in this bill, were points that fitted the No. 8 plow?
A. 21. I think they were.
Q. 22. Is this point now shown you one of the points that came in that order?
A. 22. This point we purchased of Robinson & Son.
Q. 23. Was it one of the points that came in this order?
A. 23. I am not certain.
31 Q. 24. Can you tell upon looking at this point whether it is one that came in that order?
A. 24. Yes, sir; I should say it was.

Question and answer objected to as improper and immaterial.

Q. 25. What is your objection, Mr. Selden?
A. 25. Improper and incompetent.
Q. 26. After reading affidavit attached to Plaintiff's Exhibit 4, can you tell us whether that was one of the points?

Same objection.

A. 26. This is one of the points we purchased of Robinson & Son.
Q. 27. Did you purchase at any other time?
A. 27. No; but once.
Q. 28. Was that one received in the order?
A. 28. I presume it was.
Q. 29. You know, don't you?
A. 29. No; I do not know.
Q. 30. You said you only purchased once?

A. 30. No, sir; not of this kind.

Q. 31. Then this point is one of the points that you purchased of them?

A. 31. Yes, sir.

Q. 32. Did you buy this point to fit the No. 8 plow?

A. 32. Yes, sir.

Plaintiff here offers in evidence plow point, Plaintiff's Exhibit 5-No. 5 objected to as irrelevant and immaterial.

Cross-examination:

Q. 33. Are you selling plows for the Syracuse Chilled Plow Company?

32 A. 33. Yes, sir.

Q. 34. How long have you been selling plows for this company?

A. 34. Well, sir, I cannot tell you. Two or three years, I should think.

Q. 35. Did you sell the No. 8 plow in Auburn prior to 1885?

A. 35. I think not, sir.

Q. 36. Did you sell the No. 8 plows in 1886?

A. 36. I think we did.

Q. 36. Did you sell it in 1885?

A. 37. Well, sir, I could not tell you.

Q. 38. What did you do with the points you bought of Robinson & Son?

A. 38. Sold them.

Q. 39. To whom?

A. 39. I cannot tell you. To parties having plows and wanting them.

Q. 40. Did you sell them to parties having the 1878 Syracuse plow?

A. 40. Yes, sir; I presume we sold them to parties having both the old and the new style.

Q. 41. What do you mean by the "old style?"

A. 41. The old style of 1878 plows took an ordinary point, and the new style takes one of the Syracuse Plow Company's patented points, for the reason that there is a rib in either the standard or mold-board, and I do not remember which.

Q. 42. Could this point you purchased of Robinson & Son be used on the old style of 1878 plow?

A. 42. Yes, sir; they could.

Q. 43. Did they fit the old style quite well?

A. 43. No; I think not.

33 Q. 44. What is the custom of the plow trade in reference to furnishing extra points to people buying plows?

Objected to as incompetent and immaterial; custom cannot be shown.

A. 44. It is the custom to give a new point and jointure point with each plow.

Q. 45. Does the Syracuse Chilled Plow Company furnish you an extra point to fit the plows which you sell?

A. 45. They furnish an extra point and jointure point with each plow they sell, one point and jointure point on the plow and an extra set besides.

Q. 46. Can you give the names of any farmers who purchased any of the forty-eight points?

Question objected to.

A. 46. I could not, sir.

Q. 47. Could you upon examination of your books?

A. 47. I think I could. It would only then be in cases where they had bought points on credit.

Q. 48. In sales of this character would your books give a positive accounts of the points sold?

A. 48. I think these points that we purchased of Robinson & Company were marked when we sold them. We marked on our books, so that if there was any trouble with them we would know that they were these points. Still I am not certain.

Q. 49. Have you at any time sold a plow known as the Canandaigua plow?

A. 49. Yes, sir; have a few of them for sale now.

Q. 50. Did you furnish an extra point for this plow?

A. 50. Yes, sir.

Q. 51. Of whom did you purchase these points?

34 A. 51. Of J. S. & E. C. Robinson. We purchased both plows and points of them.

Objected to as incompetent and immaterial, question not bearing upon present case.

Q. 52. What kinds of Canandaigua plows did you sell?

A. 52. The Canandaigua No. "B" and a one-horse plow; cannot tell the number of it.

Q. 53. Is it "D"?

A. 53. No; "D" is a three-horse plow; "B" and a one-horse plow.

Q. 54. Did you ever purchase any plow points of the Syracuse Plow Company that would fit any pattern of the Canandaigua plow?

Objected to as incompetent and immaterial.

A. 54. No; no point that we have ever used would fit it.

Q. 55. Did any of the plows made by Robinson & Son have a rib on the standard or mold-board which fitted into a recess in the point?

A. 55. Yes, sir; it has a mark of a raised diamond-shaped rib on the centre of the standard, or about the centre, to correspond with a similar indentation in the centre or near the centre of the point.

Q. 56. How long does a plow point usually last?

A. 56. This is uncertain. It is altogether according to the condition the ground is in.

Q. 57. Would the life of a plow point be a year?

A. 57. No, sir.

Q. 58. How many plow points are sold for each plow during the year?

A. 58. That I cannot state. From my own experience a
35 plow point would usually plow about one acre, according to the character of the ground. I think that some plow points are hard and last longer than others and some are soft and wear out quick.

Mr. WRIGHT:

Q. 59. When you speak of the 1878 plow, the No. 1 of 1878 is the one you refer to, is it not?

A. 59. It is.

Q. 60. Can you tell whether this patented point that fits your No. 1 fits the old No. 1 of 1878?

A. 60. Yes, sir; it fits the old No. 1 1878 plow.

Q. 61. Mr. Bonker, we understand you to say that you purchased of Mr. Robinson two different kinds of points, one to fit the old-style plow and another to fit the new style? Was that so?

A. 61. We purchased a good many different kinds of points from him. (You speak of the No. 1 1878 plow?)

Q. 62. You ordered two different varieties of plow points of Mr. Robinson to fit certain Syracuse plows, did you not?

A. 62. Yes, sir.

Q. 63. What was the difference in the two styles of points that you ordered?

A. 63. We ordered one to fit the old-style No. 1 1878 plow and we ordered a quantity of points to fit the new-style No. 1 1878 or new No. 8 Syracuse plow.

Q. 64. What was the difference between the points fitting these different numbers?

Q. 64. The point to fit the old-style No. 1 1878 plow was thicker on the edge than the point that fitted the new style, and the new style had a thin edge on them.

Q. 65. The new style of 1878 plow?

A. 65. Yes.

36 Q. 66. These that you purchased of Robinson?

A. 66. They are made thinner than the others and brought well down.

Q. 67. Did Mr. Robinson have any conversation with you or explain to you why he thinned the edges of these points?

Objected to.

A. 67. Yes, sir; he did.

Q. 68. Will you please state what he said to you in that conversation?

A. 68. On the Syracuse plow, 1878, there is a little round rib. This is either on the edge of the mold-board or on the standard, and I would not say which; I have never examined to see. That requires the point to have round grooves at the edge in order to fit the point. Robinson told me that he thinned the edge of the point

It is agreed that the evidence of complainant's witness Brigham be taken by Commissioner Gott. Cross-examination and rights of objection reserved.

J. J. GREENOUGH,
Counsel for Complainants.
GEORGE B. SELDEN,
Defendants' Solicitor.

Matter was here adjourned until September 8th, 1887, 10 a. m.

40 United States District Court, Northern District of New York.

SYRACUSE CHILLED PLOW CO.
v.
JAMES S. ROBINSON & EDSON C. ROBINSON. } In Equity.

At Syracuse, in said district, on the 8th day of September, A. D. 1887, before D. F. Gott, examiner.

Mr. Greenough for complainant, no one appearing for defendant.

Whereupon complainant produces as a witness—

41 CHARLES H. BRIGHAM, sworn for complainants, said:

Examined by Mr. GREENOUGH:

My name is Charles H. Brigham. I am 44 years old and live at Palmyra. I am engaged in the sale of hardware and agricultural implements as one of the firm of C. H. & E. D. Brigham. I am acquainted with John S. Robinson, one of the defendants; I have known him about ten or twelve years. I have talked with J. S. Robinson about the chilled plow made by complainants and about plow extras at dif- times, and more particularly in the spring of 1886, in relation to the extras made by him for the Syracuse chilled plow, and at this time he assured me that he was making extras that would fit nearly, if not quite, all the Syracuse plows, and those he was not as yet making he would make so that he could supply our trade with all the extras that we required, including the No. 1 1878 and No. 2 1878 and the No. 8 steel beam. The substance of it was that he could supply us with all the extras that our trade required, including plows above named.

Paper shown witness.

I received this letter, or our firm did, from J. S. Robinson & Son, and it is written to our firm.

Paper in evidence, marked Exhibit 7.

To the best of my knowledge, Exhibit 7 is in the handwriting of E. C. Robinson, one of the members of the firm of J. S. Robinson & Son. This letter sets forth, in substance, just what I have stated in my conversation with J. S. Robinson (which I think was
42 after receiving this letter). He wanted us to contract with him to sell the extras he made to fit the Syracuse plows, and that time he assured us he could make all the extras our trade re-

quired, so that we would not be dependent on the complainants for extras. J. S. Robinson told me he would furnish us with points for the No. 1 1878 plow—the patented points. This point fits the No. 8 steel-beam plow of complainants.

Q. 2. Please state what J. S. Robinson said to you in his conversation as to these points—as to his manner of constructing them. State generally what he said.

A. 2. When J. S. Robinson was at our place he showed me a copy of White's patent and then went on to state that his manner of making the points was simply so chamfer the edge of the point further back.

Exhibit 5 shown witness.

He chamfered the meeting edge of part meeting the mold-board further back than complainants did theirs. In this conversation Robinson said he would furnish us with points for No. 8 steel-beam plow manufactured by the complainants.

CHARLES H. BRIGHAM.

Matter was here adjourned until September 16th, 1887, 10 a. m. 16th September, 1887, adjourned to 28th September, 1887, at 10 a. m.

SYRACUSE, *28th September*, 1887.

Present: J. J. Greenough, Esq., counsel for complainant.

43 HARRY WIARD, the witness produced, sworn, and examined on behalf of the complainant, testified as follows:

Q. 1. Please state your name, age, residence, and occupation.

A. 1. My name is Harry Wiard; I am 49 years old; live in Syracuse; my occupation is superintendent of the Syracuse Chilled Plow Company.

Q. 2. Are you acquainted with the patent of James L. Judd, now in litigation?

A. 2. I am.

Q. 3. In what does that patent consist?

A. 3. It consists in reducing the thickness of the meeting joints of plow castings to facilitate fitting and in supporting the joints thereof with a rib.

Q. 4. Have you made plows under that patent?

A. 4. Yes, sir.

Q. 5. What is the saving in the cost of fitting up plows by its use?

A. 5. It is from a quarter to a third.

Q. 6. In what does the saving consist?

A. 6. In consists in a saving of time, saving of emery wheels, saving of power, and a lessened amount of castings which would be broken by heating through friction.

Q. 7. By what means do you distinguish the plows now sold by complainant?

A. 7. We distinguish them by number. The number 1 1878

plow and the No. 8 steel-beam plow, the No. 12 wood-beam plow, take the same wearing parts, point, mold-boards, and strips; the No. 2 1878 plow, the No. 11 steal-beam plow, and the No. 13 wood-beam plow take the same wearing parts. We have va-
44 rious numbers of plows in addition to these mentioned, on which the Judd patent is applied and used.

Q. 8. Have you seen the plow point made by defendants in this case to fit the Syracuse Chilled Co.'s plows?

A. 8. Yes, sir.

Q. 9. Is it different from the ordinary construction of plow points; and, if so, in what particular?

A. 9. It is different from the ordinary construction of plow points in the fact that its edges are thin and chamfered back.

Q. 10. Could a point such as made by defendants be made to fit your plows, with Judd's devices thereon, unless it was especially constructed for that purpose?

A. 10. No, it could not.

Q. 11. Could any plow point be used upon the plows with Judd's devices thereon, unless it was especially and peculiarly constructed to fit it by chamfering the edge of the joint?

A. 11. It could not.

Q. 12. How long have you been acquainted with and engaged in the construction of plows?

A. 12. Thirty-five years.

Q. 13. Did you ever, with your extensive knowledge of the plow manufacture and trade, ever see or hear of a plow point having its edge thinned or chamfered at the joint, as is required to fit the plows made by you, having Judd's devices upon them, before his patent was granted?

A. 13. No; I never did.

Q. 14. Would it be possible to make a plow point that
45 would fit your plows, unless it was designed, and your plows carefully measured to make the patent therefor?

A. 14. "Possible" is a pretty strong word, but I think it would be safe to say it would not be possible. It is a very difficult thing to do when you have the plow before you.

Q. 15. Was the pattern altered in any way from that used by you to make the castings by defendants; and, if so, how?

A. 15. Yes; they were altered by chamfering back farther.

Q. 16. Would that alteration benefit or injure the point?

A. 16. It would injure it to the extent that it would weaken it.

Q. 17. Would that change in any way obstruct its fitting the seat for the point constructed by you in the patented plow of Judd's?

A. 17. No.

Q. 18. Do you consider the use of the point made by defendants upon the Syracuse chilled plow an exact equivalent of the point you used in the combination patented by Judd?

A. 18. Yes.

Q. 19. Have you examined the patent of L. B. White for plows, patented June 24th, 1875, No. 164,952? If so, do you find in it the features patented by Judd?

A. 19. I have examined it, but I do not find any of the features patented by Judd.

Q. 20. Would a casting of White's point, described and shown in his patent and drawing, possess the features patented by Judd?

A. 20. No, sir; it would not.

46 Q. 21. Is the joint of White's thinned, as in Judd's patent?

A. 21. No, sir; it is not.

Q. 22. Is there a rib running along the line of junction, except at the single point of White's patent where a rib or boss, "*m*," projects?

A. 22. There is not.

Q. 23. Is all the rest of the joint of the point at junction with the mold-board of full thickness?

A. 23. It is.

Q. 24. At the place where the point is notched in White's patent to receive the rib "*m*" is there less thickness to fit than at any other place? And, if not, state why.

A. 24. There is not. You have the same joint to fit in the White patent, but it is divided into two parts, one part of it being fitted to the edge of the mold-board and the other part being fitted to the edge of the embossment of rib "*m*," and thereby made more difficult to fit than if it was in one straight line.

Q. 25. Would the work of fitting such a point, containing the devices described and shown by White, be greater or less than the ordinary point?

A. 25. It would be greater.

Q. 26. Is the point as made by defendant better or worse than the ordinary construction of points if made for any plow except one with a rib such as form a part of Judd's patent?

A. 26. It would not be as good, as there would be no support under the meeting edges.

47 Q. 27. Look at B. F. Chandler's patent, patented August 7th, 1877, No. 193,923, and see if you find in that patent any element of the device patented by Judd or the element of his invention.

A. 27. I do not find the least element in this contained in the Judd invention—not in the slightest particular.

Q. 28. Have you examined the patent of Odell & Little, patented December 6th, 1870, No. 109,929, and do you find the slightest analogy in that patent to the invention of Judd, described in this patent?

A. 28. Not the slightest in the world.

Q. 29. Have you examined the patent of R. B. Chenoweth, patented March 17th, 1834; if so, do you find any features in it like the inventions patented by Judd?

A. 29. Not any whatever.

Q. 30. Have you examined the patent of J. F. Benton, patented August 26th, 1873, No. 142,074; if so, do you find anything contained in said patent like the patent of Judd, or any element in it resembling Judd's patent?

A. 30. It has no resemblance whatever, nor is there any similarity in the two patents in any particular.

Q. 31. Have you examined the patent of Robert Themar, patented May 30th, 1871, No. 115,543; if so, do you find the combination or any element of the combination of the patent of Judd now in litigation?

A. 31. I have examined the patent, but find no such element nor any resemblance to it.

Q. 32. Have you examined the patent of Paul Dennis, dated February 23d, 1858, No. 19412, and *and* also reissue of said patent of August 4th, 1863, No. 1515; if so, do you find any of the features of the combination patented by Judd?

48 A. 32. Not any. I have examined it and find no such element in it.

Q. 33. Please state what is amount of your trade in extra points of all kinds for supplying the demands on your plows as compared with plows.

A. 33. We sell about 250,000 points per annum, being about fifteen times more in number than the plows we sell in the same time.

Q. 34. How many points does a farmer usually require in a year in using a plow?

A. 34. I think it would run all the way from one to thirty. The latter number, however, is extreme. It depends very much upon the kind of soil and the use to which the farmer puts the plow. Some have the plow in constant use, while others use it a very little.

Q. 35. What do you deem the proportionate advantage of Judd's invention in fitting up these extra plow points?

A. 35. It would be a saving of one-third in labor and the same proportion in wear on the emery wheels, which would be an actual saving of one-third of the expense.

HARRY WIARD.

Mr. EDWARD WILHELM, a witness produced, sworn, and examined on behalf of the complainant, testified as follows:

Q. 1. Please state your name, age, residence, and occupation.

A. 1. My name is Edward Wilhelm. I am 41 years of age; reside at Buffalo, in this district, and am by occupation a mechanical engineer and solicitor of patents.

49 Q. 2. How long have you been engaged in matters pertaining to letters patent and inventions?

A. 2. I have been continuously engaged in matters relating to patents for inventions during the last twenty years. I have during that time solicited a large number of patents, and during the last fourteen years I have frequently been called upon to testify as expert in patent cases pending in the courts of the United States, and I have also testified as expert in the high court of chancery of Canada.

Q. 3. Are you familiar with plows and similar agricultural implements?

A. 3. I have long been familiar with plows and similar agricultural implements. I have solicited a large number of patents for plows and similar agricultural implements, and have been engaged as expert in litigations in which patents for improvements in plows were involved.

Q. 4. Have you examined letters patent to James L. Judd, No. 231,810, August 31st, 1880, being the patent in suit in this case, and do you understand the invention described and claimed therein?

A. 4. I have carefully examined the letters patent referred to in the question and understand the invention described and claimed therein.

Q. 5. Please give your understanding of the invention described and shown in the Judd patent and particularly referred to in the second clause of the claims thereof.

A. 5. The Judd patent relates to the means whereby the several parts of castings constituting the lower part of the plow are secured together and has the object to facilitate the operation of fitting and securing the parts together. This object is attained in the
50 Judd invention by reducing the thickness of the meeting edges at the joint of the plates and supporting those thinned or reduced meeting edges by means of a rib formed on the supporting part and upon which the thinned meeting edges rest. The Judd invention is designed especially for use in plows in which the parts which are required to be fitted together are chilled or very hard casting, and one of the principal advantages of the Judd invention is that the thinned edges of the parts can be more readily ground and fitted than they could be if they were not reduced in thickness. The parts which are to be fitted together consists of a supporting standard, the mold-board, the point, and the landside. The supporting standard is provided on its face with a rib which forms a support for the thin meeting edges of the mold-board and point, which thinned edges rest upon the crown of the rib. This rib extends along the line of junction of the superimposed plate—that is, along the line of junction of the mold-board and the point—and sustains the meeting edges of these parts against pressure applied to the faces thereof in grinding or polishing the same, when mounted, and in use in the field. Turning now to the second claim of the Judd patent, I find that it embodies as its element the rib which is formed on the supporting part of standard along the line of junction of the superimposed plates and these plates which have their edges chamfered off or thinned so as to rest on the rib and be supported thereby.

Q. 6. Is, in your opinion, the thinning of the edges of the mold-board and point an essential element of the combination set forth in the second claim of the Judd patent?

51 A. 6. Yes, sir; the second claim specifies that the edges of the castings are chamfered or thinned, as I have called it.

Q. 7. Please examine the Exhibit Complainant's Plow and state how that compares with parts which are described and shown in the Judd patent.

A. 7. The plow point of Exhibit Complainant's Plow is constructed

in substantial accordance with the Judd patent. It has its upper edge, which meets the lower edge of the mold-board, chamfered off or thinned as described and shown in the Judd patent, with this difference, that in the exhibit the chamfer is carried further back on the point than it is in the patent (but this is an immaterial difference, in my opinion, because it is not *not* necessary under the Judd patent to have the chamfered edge fit against the supporting rib over the entire surface of the chamfered edge), the purpose of the Judd invention being fully accomplished if the chamfered edge rests on the top or crown of the supporting rib. Another difference which I notice between the complainant's plow point and the point shown in the drawing of the Judd patent is that in the patent the chamfer extends without interruption along the upper edge of the point, while in the exhibit the chamfer is interrupted above the holes through which the bolt passes which secures the point to the standard. This is an immaterial difference, in my opinion, as the enlargement or interruption of the chamfer is used merely for the purpose of strength-ing a short portion of the upper edge of the point above the bolt-hole. The standard of complainant's plow is also constructed in accordance with the Judd patent, as it is provided with a rib which extends along the meeting edges of
52 the point and mold-board and which supports the thinned meeting edges of these parts. I notice that the lower part of the rib is cut away for a short distance in order to make room for the enlargement on the point over the bolt-hole, but this, in my opinion, is an immaterial variation. The mold-board of exhibit referred to is also made in accordance with the Jud patent, as it has its lower edge chamfered off or thinned and resting upon the rib formed on the standard. In the mold-board of this exhibit the chamfer extends all along the lower edge of the mold-board and is not interrupted in the point.

Q. 8. Please examine Complainant's Exhibit No. 5, being the plow point alleged to be manufactured and sold by the defendants, and state how that compares with point of the Judd patent.

A. 8. The point referred to in the question is constructed in substantial accordance with the Judd patent, as it has its lower edge chamfered or thinned so that the surface which is required to be ground and fitted is much reduced as compared with what it would be if the point were of the full thickness throughout the length of its upper edge. I notice that the chamfer or thinned portion of the point extends further back on this exhibit than it does on complainant's point, but this is an immaterial differenee for the reason, as I have before stated, that it is not necessary under the Judd patent that the chamfer of the superimposed plates should fit closely against the sides of the rib of the standard or seat, as the object of the Judd invention is attained if the thinned portion of the superimposed plates rest upon the top of the rib and are supported thereby. I notice that this point is provided with an enlarge-
53 ment above the bolt-hole in substantially the same manner in which complainant's point is constructed with such an enlargement.

Q. 9. Assuming that defendants' point was applied to a plow standard provided with a rib such as is found in the Judd patent and in Complainant's Exhibit Complainant's Plow, and that such standard is also provided with a mold-board having its edge chamfered or thinned and resting upon such rib, would such structure, in your opinion, embody the invention set forth in the second claim of the Judd patent?

A. 9. In my opinion such structure would embody the invention set forth in the second claim of Judd patsnt, because it would contain a supporting standard or seat provided with a rib extending along the line of junction of the superimposed mold-board and point, and it would also contain a mold-board and point having their meeting edges chamfered or thinned and resting upon the rib of the seat, as specified in the Judd patent and particularly set forth in the second claim thereof.

Q. 10. Have you examined and do you understand the following letters patent of the United States, being the patents set uw in the answer in this suit, to wit:

L. B. White, No. 164,952, June 29th, 1875.
B. F. Chandler, No. 193,923, August 7th, 1877.
Odell & Little, No. 109,925, October 6th, 1870.
R. B. Chenoweth, No. —, March 7th, 1834.
J. F. Benton, No. 142,074, August 27th, 1873.
Temar & Brand Bros., No. *No.* 115,543, March 30th, 1871.
P. Dennis, No. 19412, February 23d, 1858.
54 P. Dennis, reissue No. 1515, August 4th, 1863.

And, if yes, please state whether or not, in your opinion, either of said patents embodies the invention of the Judd patent, and particularly the construction set forth in the second claim of the Judd patent.

A. 10. I have carefully examined the patents referred to in the question, and I do not find that either of said patents embodies the invention of the Judd patent or the construction set up in the second claim of the Judd patent.

EDWARD WILHELM.

NORTHERN DISTRICT OF NEW YORK, *ss:*

I, Daniel F. Gott, a master and examiner duly appointed by the circuit court of the United States for the northern district of New York, do hereby certify that the foregoing evidence is all the evidence taken before me as such master and examiner in the above-entitled action.

Dated September 28, A. D. 1887.

D. F. GOTT, *Examiner.*

(Indorsed:) Evidence.

moved from the joint of the share and mold-board with depressions in the share and mold-board to fit over the same.

Q. 20. Such being the facts, do you find any elements in White's patent that could without radical change be used for the same purpose as Judd's invention? If not, state why and your reasons therefor.

A. The device of Mr. White, as expressed in his specifications, could not be made to serve properly, except they fitted at the sides and ends of the rib or embossment, and the joint at the meeting edges could not be ground off without leaving an open space between them, and there is nothing in Mr. White's patent that indicates that that was the purpose, while the whole tenor of the specifications in the Judd patent shows that the main object was to admit of grinding the meeting edges and bringing them up to a perfect fit and supporting the meeting edges with the rib, so that they could be ground off to a uniform and smooth surface and sustain them while in use against any undue pressure on the surface. The same embossments that would be an equivalent and fully answer the purpose of Mr. White's invention would, if used in place of Mr. Judd's device, entirely defeat the object and purpose for which it was
63 designed and would absolutely prevent doing just what he intended to do.

Q. 21. In Mr. White's device what length of rib or projection would produce the best effect for his purposes?

A. A square one, in my judgment, would be the best shape that could be used. It would be most effective in preventing a strain upon the bolts by any wedging movement.

Q. 22. What would be the mechanical effect of extending the projection or rib of White's patent upon the fastening bolt? Would it produce a greater or less strain upon the bolt?

A. The longer the rib is in the White patent in proportion to the width the more the mold-board or point could be moved, if any movement was allowed, in the bolt-hole, which in a practical application is quite likely to be the case.

Q. 23. The extension of the rib along the line of junction, as in Judd's patent, would be a serious defect in the White patent, would it not?

A. Yes; I think it would. If extended the full length of the joint it would practically defeat the object of White's invention.

—. In the patents set up in the original answer is there a single one in which the thin edge of the point could be ground off or removed without spoiling the joint on the line of the mold-board?

A. In the R. B. Chenoweth patent there is no thin edge there. In the Robert Themar and Brand Brothers, No. 115,543, there is apparently a depression on the lower side of the rear portion of the point and a corresponding enlargement on the upper side,
64 which has the appearance of being pressed up in some wrought metal, and there seems to be no provision whatever for fitting the joints in any manner. The Chandler patent, No. 193,923, seems to be constructed so as to come to a given point when complete, and does not show, in my judgment, any provision for fitting the joint,

but if it was ground it would have to be ground over the whole surface of the meeting edges, which appear to be the same thickness of the other parts of the same casting. The patent of Thos. E. C. Brindley, No. 180,004, does not show any reduced thickness at the meeting edges, but in the portion immediately about the bolt-hole appears to be thicker than the other part of the point by an embossment which fits into a corresponding recess in the seat. The P. Dennis reissued letters patent No. 1515, the joint between the mold-board and point is bevelled, and hence the surface to be ground off, if it is to be fitted at all, would be greater than the thickness of the point, but I see nothing in the drawings or specifications to indicated that any fitting was intended.

Q. 25. The facts being as you have stated, could the acute angle of any one of those points be ground off or removed without spoiling the joint on the line of junction?

A. No, sir; it could not.

Q. 26. Is there, mechanically speaking, the remotest analogy in either of the patents included in your two last answers to the invention of Judd as set forth in his patent; and, if so, in which and in what particular?

Objected to as leading.

65 A. There isn't, in my judgment, any analogy or — that in any manner shows any similarity either in design or in construction.

Q. 27. Prior to your knowledge of the invention of Mr. Judd, as set forth in his patent, did you ever see a point so formed and thinned at the edge as to be ground off on its edges to fit at the junction with the mold-board?

A. I have no recollection of ever having seen one.

Q. 28. Did you ever see or know of a device, prior to Mr. Judd's invention, thinned at the edges, so that they could be ground off and supported by a rib, as in his second claim?

A. No, sir.

Q. 29. Did the invention first shown and described to you by Mr. Judd as his contain all the elements described in his patent?

A. Yes, sir.

Cross-examination by defendants' solicitor:

C. Q. 30. You were present at Rochester and heard the defendants' testimony and examined their exhibits, were you not?

A. I was at Rochester, and think I examined all the exhibits; not minutely, however.

C. Q. 31. You examined the Defendants' Exhibit Corrugated-Point Plow, I believe?

A. I did.

C. Q. 32. Is that exhibit, so far as relates to the corrugated-point and the seat therefor, substantially like the plows made by your company under the Hall patent?

A. Yes, sir.

C. Q. 33. Do you still manufacture corrugated-point plows?

66 A. Well, not to any extent; only when ordered.

C. Q. 34. Did you at any time while you were manufacturing corrugated-point plows make any substantial changes in the corrugated point or its seat?

A. No, sir.

C. Q. 35. Did you make more than one size of corrugated plows?

A. Yes, sir.

C. Q. 36. You might state how many.

A. I think about six different sizes.

C. Q. 37. Where was Mr. Judd while you were away on your trip between the 23d day of June and the 11th day of July, 1879?

A. I suppose he was at home. I am not sure about that; I mean here at the works.

C. Q. 38. Had Mr. Hall obtained any castings from his corrugated-point patent prior to your return on the 11th day of July, 1879?

A. No, sir.

C. Q. 39. How soon after the 11th of July did he get his first castings on his corrugated-point pattern?

A. I can only judge of that by the time that we produced the first plows. I could not tell just how soon the casting was made. I should think, though, about five months.

C. Q. 40. Hall's application for a patent was filed on the 29th of August. How long before that was the model made of which you say you think you made a part?

A. It was between the 11th day of July and the 29th day of August.

C. Q. 41. Did you not have the model completed some little time before the application was filed?

67 A. My opinion would be that we did not.

C. Q. 42. Were not the drawings for Hall's patent made from this model?

A. They were.

C. Q. 43. How long was the draughtsman employed in making these drawings?

A. I could not state positively, but I should think not more than three or four days from the time he received the model until he delivered the drawings.

C. Q. 44. Are the drawings substantially like the model?

A. I believe them to be.

C. Q. 45. What changes had Mr. Hall made on the wooden-point pattern which you say you loaned Mr. Judd so as to cause it to represent the Hall invention?

A. He attached ribs along the back surface of the point where it comes in contact with the seat.

C. Q. 46. That is, he made it to correspond substantially with Fig. 2 of the Hall patent?

A. The only similarity there was in the model which Mr. Hall handed me was in the fact that it had ribs on the back surface without any reference to the utility or convenience of manufacture or any of the mechanical elements that entered into the invention, he

leaving that for me to work out in my own way and without any instruction from him.

C. Q. 47. Were the ribs on the pattern Mr. Hall showed you rounded like those shown in the patent?

A. I don't think they were.

C. Q. 48. Were they tapering and inclined toward each other?

A. They were tapering endways to conform with the back portion of the point.

68 C. Q. 49. Mr. Hall had done nothing more to this pattern, then, than to attach these tapering ribs to the under side so as to convey to you his idea?

A. Nothing more than that, or just what I could do or any mechanic in ten minutes.

C. Q. 50. There were no other changes made on the patent?

A. No, sir.

C. Q. 51. How long was it after the 11th day of July that Mr. Hall showed you this pattern he had put the ribs on?

A. I have no means of fixing the date; it might have been in a very few days, and it might have been in a few weeks. I was very much hurried and had many things to see to.

C. Q. 52. This point you loaned Mr. Judd and which Mr. Hall used to demonstrate his invention, it was one of your ordinary patterns, was it?

A. It was a pattern that I had made several years previous to satisfy myself in regard to my ability in that direction, and which I had no use for, but simply kept it without any definite design in regard to it, the construction of which was not adapted to chilled-plow business.

C. Q. 53. Did it have thick edges on or were they chamfered?

A. It had thick edges. The body of the point was of uniform thickness.

C. Q. 54. Was the model for the Hall patent made of brass or iron?

A. Neither; it was made of wood.

C. Q. 55. When did your company first commence the manufacture of plows under the Judd patent?

69 A. It was previous to Mr. Hall's death, which occurred, I believe, the 19th day of April, 1881.

C. Q. 56. How long previous?

A. I should think three, four, or five months—say Jan. 1st, 1881, would be as near as I could locate it.

C. Q. 57. When was the first standard pattern with the rib like the Judd's patent made for your company?

A. I should think about January 1st, 1881.

C. Q. 58. No such patterns were made until the Judd patent was issued?

A. No, sir.

C. Q. 59. Does your company make plow standards with a continuous rib extending all the way across them, like Fig. 2 of the Judd patent?

A. Yes, sir.

C. Q. 60. And you also on some of the plows cut away the rib opposite the bolt-hole in the point?

A. We do.

C. Q. 61. Do you on any of your plows use a rib on the standard at the edge of the landside, as shown in Fig. 3 of the Judd patent?

A. Yes, sir; we do.

C. Q. 62. Answer to question five you said that the Hall plow was not sold prior to the 1st of May, 1880. How do you fix that answer?

A. I mean the plow like the one exhibited at Rochester. I fix the date by our books.

C. Q. 63. When did your company first sell plows with corrugated points?

A. I think about the 15th of January, 1880.

70 C. Q. 64. On what proportion of the plows made by your company under the Judd patent do you use the continuous rib on the standard?

A. On all our new plows that we have gotten up since we purchased the Judd patent we used the continuous rib. On old plows on which we have applied it, and where we had some misgivings as to the strength through the bolt-hole, we have cut away the rib so as to prevent weakening the point at that place by chamfering the edge. I should think about two-thirds of our present production have the continuous rib.

C. Q. 65. On what proportion of all the plows now made by your company do you use the rib on the landside?

A. About two-thirds, I should say.

C. Q. 66. Do you think there would be any patentable invention in increasing the length of the recess or the rib "*n*" of the White patent?

A. Not unless you accomplish some additional purpose farther than was accomplished by the White patent.

C. Q. 67. Do you think there would be any patentable invention in making the recess "*n*" and the rib "*n*" round instead of square in the White patent?

A. I don't know that there would.

C. Q. 68. Do you think there would be any patentable invention in applying White's invention of recesses "*n*" in the edges of the points and mold-board of the plow to chilled plow castings?

A. I don't think there would.

C. Q. 69. Has your company ever advertised for sale points for Canandaigua plows?

A. Yes, sir.

C. Q. 70. When did you first issue them?

A. In the fall of 1876, being the year in which the company was organized. The name of the company, however, has been changed from the Robinson Chilled Plow Company to Syracuse Chilled Plow Company. I think in the fall of 1878.

C. Q. 71. And the present Syracuse Chilled Plow Company has continued to advertise such points?

A. Yes, sir.

C. Q. 72. Until the present time?

A. I don't know as we have. I rather think not.

71 C. Q. 73. Was Mr. Bonker, of Auburn, authorized by you to sell your extras?

Objected to as irrelevant.

A. I think he was authorized to sell extras that we sold him.

C. Q. 74. Did your company have any other agent or representative in Auburn prior to the commencement of this action except Mr. Bonker?

Objected to as before.

A. We did.

C. Q. 75. Does Mr. Bonker still continue to represent your company in Auburn?

A. No, sir.

Redirect examination:

R. D. Q. 76. Under what circumstances did the Syracuse Chilled Plow Company advertise the points of the Canandaigua plow? Please state the circumstances connected therewith.

A. Previous to January 17th, 1876, and but a short time before that time, parties in Syracuse entered into an arrangement
72 with Mr. John S. Robinson, of Canandaigua, to manufacture chilled plows under a patent owned by him. They, not being disposed to enter personally into the business at that time, employed me in their interest at Canandaigua at their own expense and as an offset to Mr. Robinson's personal service in the business for the purpose of testing more fully the value of his patents and the feasibility of doing a profitable business under them with a view to organizing a company in Syracuse for the purpose of manufacturing plows under those patents. Under this arrangement I went to Canandaigua on the 17th day of January, 1876, and took supervision of the mechanical department of that business, Mr. Robinson conducting the business of outside departments. This arrangement continued until about the 1st of June of the same year, at which time, the test having proved satisfactory, it was decided to organize a company in Syracuse, which was immediately done, and which company purchased from the Canandaigua organization all material and goods on hand and removed them to Syracuse, together with all of the patterns which I had personally made during my stay at Canandaigua, which consisted of one new pattern complete, which was afterwards known as the No. 1 1876 plow, and many new patterns for the Canandaigua plow, such as points, strips, &c., the old ones which Mr. Robinson had used previous to this time not being, as we thought, quite as good as we could make. These goods were all removed to Syracuse. We never made any Canandaigua plows after we came to Syracuse; but the ones made by us here, proving

more satisfactory than the Canandaigua plows, immediately
73 superseded them, and those in the hands of our agents of the old pattern of the Canandaigua plow were returned to us, and we gave our agents plows of the Syracuse manufacture in their place. We had also purchased from the Canandaigua Company, as above stated, all the extra castings, and these, with the returned plows, made us quite a large stock of Canandaigua goods, and, they not being made anywhere else, we continued to advertise and furnish those extras until this stock was consumed or nearly so. We have, however, still on hand quite a stock of extras purchased from the Canandaigua organization, for which we paid them twelve years ago or thereabouts.

R. D. Q. 77. Did Mr. Hall tell you who made the rough model of the corrugated point that he showed you, about which you have testified?

Objected to as incompetent and not the best evidence.

A. I believe he told me that Mr. J. L. Judd made it.
R. D. Q. 78. Is Mr. L. W. Hall now living?
A. No, sir; I think Mr. Hall died the 9th of April, 1881.
R. D. 79. Did that model have a seat for the point?
A. It had not.

HARRY WIARD.

Sworn to before me June 8, 1888.

D. F. GOTT,
Special Examiner.

74 U. S. Circuit Court, Northern District of New York, *ss:*

I, Daniel F. Gott, an examiner duly appointed by the circuit court in and for the northern district of New York, hereby certify that the foregoing is all the evidence of the witnesses Harry Wiard, James L. Judd, Edward Wilhelm, Samuel C. Bonker, Burnet F. Dunne, and Charles H. Brigham; that each of said witnesses was by me sworn before the commencement of his testimony; that the same was taken by me or under my direction or pursuant to stipulation of the respective parties; that the testimony of Samuel C. Bonker, Burnet F. Dunne, Charles H. Brigham, Edward Wilhelm, and the first part of Harry Wiard's was taken prior to September 28, 1887, and the remaining testimony was taken after defendants introduced their testimony; that I am not connected by blood or marriage with either of the parties nor interested, directly or indirectly, in the matter in controversy.

In testimony whereof I have hereunto subscribed my name this 8th day of June, 1888.

D. F. GOTT,
Examiner for Northern Dist. of New York.

75 COMPLAINANT'S EXHIBITS.

EXHIBIT 1.

THE UNITED STATES OF AMERICA.

No. 231,810.

To all to whom these presents shall come:

Whereas James L. Judd, of Syracuse, New York, has presented to the Commissioner of Patents a petition praying for the grant of letters patent for an alleged new and useful improvement in plows, he having assigned one-half of his right, title, and interest in said improvement to Harry Wiard, of same place, a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and has complied with the various requirements of law in such cases made and provided; and

Whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law:

Now, therefore, these letters patent are to grant unto the said James L. Judd and Harry Wiard, their heirs or assigns, for the term of seventeen years from the thirty-first day of August, one thousand eight hundred and eighty, the exclusive right to make, use, and vend the said invention throughout the United States and the territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the city of [L. S.] Washington, this thirty-first day of August, in the year of our Lord one thousand eight hundred and eighty, and of the Independence of the United States of America the one hundred and fifth.

A. BELL,
Acting Secretary of the Interior.

Countersigned:
E. M. MARBLE,
Commissioner of Patents.

77 UNITED STATES PATENT OFFICE.

JAMES L. JUDD, of Syracuse, New York, assignor of one-half of his right to Harry Wiard, of same place.

Plow.

Specification forming part of Letters Patent No. 231,810, dated August 31, 1880. Application filed June 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, James L. Judd, of the city of Syracuse, New York, have invented a certain new and useful improvement in

forming the joints of the point, mold-board, landside, &c., of plows, of which the following is a specification.

It is found in practice that considerable labor is required to grind the meeting edges of the several parts at the joints, and especially when they consist of chilled or very hard metal castings. I remedy this difficulty in the following way, which at the same time serves to strengthen and give stability to the union of the parts, which is shown and illustrated in the accompanying drawings, in which—

(Here follows diagram marked p. 76.)

Fig. 1 shows the under side of the plow-point; Fig. 2, the seat of the plow-point on standard. Fig. 3 shows the inside of the landside and its seat; Fig. 4, a cross-section at right angles to a joint, showing the relative position of the parts.

Along the lines of junction of the superimposed plates there is a bead or rib, *a*, projecting from the seat on which the plate or plates rest, and along the meeting edges of the point (see Fig. 1) and other parts, the under or inside is chamfered off at the meeting edge *b* to fit said rib *a*, as is clearly seen in the figures on the drawings, by which the edge at the joint is made thin, so as to be readily and expeditiously ground and fitted with a minimum amount of labor, while the thin edges, when in place, are firmly sustained by the rib *a* aforesaid, as is clearly illustrated in Fig. 4, which also aids to keep the parts steadily in place when screwed together.

Having thus fully described my device, I claim—

1. In a plow frame or seat, the rib *a*, formed on the seat along the line of junction of the superimposed parts, as and for the purposes specified.

2. The combination of the ribs *a* and chamfered edges *b* in plow-castings, substantially as and for the purposes specified.

JAMES J. JUDD.

In presence of—
J. J. GREENOUGH.
R. A. McENTEE.

(Indorsed:) Pl'ff's Ex. 1, D. F. G., ex'r.

78 Received for record January 10th, 1881, and recorded in Liber I 26, page 59, of Transfers of Patents.

[L. S.] In testimony whereof I have caused the seal of the Patent Office to be hereunto affixed.

E. M. MARBLE,
Commissioner.

Ex'd: F. C. T.

COMPLAINANT'S EXHIBIT No. 2.

Whereas I, James L. Judd, of Syracuse, Onondaga county, State of New York, did, in conjunction with Harry Wiard, of the same place, as the assignee of one-half part of my invention, obtain letters patent, granted to myself and the said Harry Wiard, assignee,

(No Model.)

J. L. JUDD.

Plow.

76

No. 231,810. Patented Aug. 31, 1880.

Fig. 1.

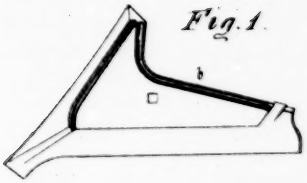
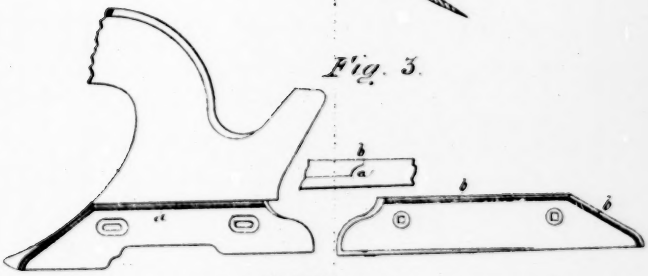


Fig. 2.

Fig. 4.

Fig. 3.



No 239.
Syracuse Chilled Plow Company
v.
Robinson et al.
p. 76

Witnesses:
A. Johnson
F. West

Inventor:
James L. Judd
by J. J. Greenough Atty.

and dated the thirty-first day of August, 1880, No. 231,810, for certain improvements in plows; and whereas the Syracuse Chilled Plow Co., of Syracuse, aforesaid is desirous of acquiring an interest in the same:

Now, therefore, be it known that for and in consideration of one thousand dollars to me in hand paid, the receipt of which is hereby acknowledged, I, the said James L. Judd, have sold, assigned, and transferred, and by these presents do sell, assign, and transfer, unto the said Syracuse Chilled Plow Co. the undivided one-half part of the whole right, title, and interest in and to said invention and in and to the letters patent therefor aforesaid, being my entire interest therein; the said undivided one-half part to be held and enjoyed by the said Syracuse Chilled Plow Co. for its own use and behoof and for the use and behoof of its legal representatives to the full end of the term for which said letters patent are or may be granted as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof I hereto set my hand and affixed my seal this 27th day of December, A. D. 1880.

JAMES L. JUDD. [L. S.]

In presence of—
WM. M. JUDD.
H. WIARD.

(Indorsed:) Assignment, Pl'ff's Ex. —, D. F. G., ex'r.

79 Received for record Jan. 27, 1882, and recorder in Liber Y 27, page 35, of Transfers of Patents.

[L. S.] In testimony whereof I have caused the seal of the Patent Office to be hereunto affixed.

V. D. STOCKBRIDGE,
Acting Commissioner.

Ex'd: F. C. T.

80 COMPLAINANT'S EXHIBIT No. 3.

This indenture, made this twenty-second day of December, in the year of our Lord one thousand eight hundred and eighty-one, between Francis Hall and William J. Wallace, as executors of the last will and testament of Levi W. Hall, formerly of Syracuse, N. Y., and now deceased; Harry Wiard and William R. Bullock, both of Syracuse, N. Y., parties of the first part, and The Syracuse Chilled Plow Company, a corporation created and organized under the laws of the State of New York in and by the name aforesaid and having its principle place of business in the city of Syracuse aforesaid, party of the second part, witnesseth:

That the said parties of the first part, in consideration of the sum of three thousand eight hundred thirty-three and $\frac{33}{100}$ dollars to them, the said Francis Hall and William J. Wallace, as executors, &c., as aforesaid, and of the sum of six thousand and sixty dollars to him, the said Harry Wiard, and of the sum of two thousand six

hundred six and $\frac{67}{100}$ dollars to him, the said William R. Bullock, by said party of the second part in hand paid, and the receipt whereof is hereby acknowledged, have sold, assigned, transferred, and set over, and by these presents do hereby sell, assign, transfer, and set over, unto said second party, its successors and assigns, each and every the following-described letters patent and all their right, title, and interest in and to each and every the respective inventions secured by said letters patent, and each of said first parties has and does hereby sell, assign, transfer, and set over unto said second party,

said Syracuse Chilled Plow Company, its successors and as-
81 signs forever, each and every of the following-described letters patent, and all the right, title, and interest which he has either individually or in common with others or in any manner in, to, or under or in any manner to arise under each and every of the following-described letters patent of the United States of America, and the respective inventions secured by said letters patent:

* * * * * * *

Letters patent of the United States of America granted and issued to James L. Judd and Harry Wiard for new and useful improvement in plows, which letters patent bear date August 31, 1880, and are numbered 231,810, * * * the same to be held and enjoyed by the said Syracuse Chilled Plow Company for its own use and behoof and for the use and behoof of its legal representatives, successors, and assigns to the full end of the term for which said letters patent are granted or may be granted, reissued, or renewed, as fully and entirely as the same would have been held or enjoyed by the assignors thereof if this assignment and sale had * * *

And the said parties of the first part, in consideration of the above payments to them made, do hereby further covenant and agree to and with said second party, said Syracuse Chilled Plow Company, its successors or assigns * * *

And, in consideration of the sums paid to them as aforesaid, said first parties, said Wallace and Hall, executors, etc., as aforesaid, do, and each of said first parties does hereby, further covenant and agree that he will, at the request of said second party and at its cost and

expense, at any and all times do and cause to be done what-
82 ever act, acts, thing, or things it may be necessary for him to do to enable said second party to obtain a good and proper reissue or renewal of said letters patent or any of them, such reissues and renewals and all right thereto having been herein transferred and assigned to it, said second party.

The letters patent, inventions, rights, and property herein and hereby sold, assigned, and transferred are so sold, assigned, and transferred subject to the payment of the following-described notes given in payment of the purchase price thereof, viz:

One note for two thousand and twenty dollars, payable one year from date thereof to the order of Harry Wiard.

One note for two thousand and twenty dollars, payable two years from the date thereof to the order of Harry Wiard.

One note for two thousand and twenty dollars, payable three years from the date thereof to the order of Harry Wiard.

One note for one thousand two hundred seventy-seven $\frac{77}{100}$ dollars, payable one year from the date thereof to the order of Francis Hall and William J. Wallace, as executors, etc., of Levi W. Hall, deceased.

One note for one thousand two hundred seventy-seven $\frac{78}{100}$ dollars, payable two years from the date thereof to the order of Francis Hall and William J. Wallace, as executors, etc., of Levi W. Hall, deceased.

One note for two thousand two hundred seventy-seven $\frac{78}{100}$ dollars, payable three years from the date thereof to the order of Francis Hall and William J. Wallace, as executors, etc., of Levi W. Hall, deceased.

83 One note for eight hundred sixty-eight $\frac{89}{100}$ dollars, payable one year from the date thereof to the order of William R. Bullock.

One note for eight hundred sixty-eight $\frac{89}{100}$ dollars, payable two years from the date thereof to the order of William R. Bullock.

One note for eight hundred sixty-eight $\frac{89}{100}$ dollars, payable three years from the date thereof to the order of William R. Bullock.

All of said notes bearing date December 31, 1881, and payable at the State Bank of Syracuse, with interest at the rate of three per cent. per annum, payable annually on said notes.

And said first parties are to have and retain upon and in said letters patent, inventions, rights, and property a claim, lien, and interest sufficient to secure the payment as the same become due of the aforesaid notes, the absolute property therein to such extent not vesting in said second party until said notes are paid as aforesaid. It is further provided that upon said vendor's lien and interest in said letters patent and the inventions thereby secured, or any of them, having been foreclosed and become absolute by reason of any default in payment of said notes, principal or interest, as aforesaid, said first party, their assigns, &c., shall forthwith have a right of action, each for his just and lawful share, against said first party for royalties from the date hereof, for the use of the invention secured by such letters patent, at and according to the rate agreed and fixed upon in a certain contract made and executed by and between said first party and Levi W. Hall, Harry Wiard, and

84 William R. Bullock, dated Nov. 1, 1879, and which contract is by virtue of this assignment annulled, cancelled, and avoided.

It is further provided that the letters patent herein mentioned shall be deposited with the Trust & Deposit Company of Onondaga in trust, to abide the event of said notes, and to be delivered to said second party upon payment or other satisfaction thereof.

The words "and for the use and behoof," on the fifth page hereof, having been interlined before execution.

In testimony whereof the said first parties have hereunto set their respective hands and seals the day and year first above written.

FRANCIS HALL, *Executor.* [L. S.]

Sealed and delivered by Francis Hall, executor, &c., in presence of—

EDWARD KENT.
FRANK J. WEBB.

WM. J. WALLACE, *Executor.* [L. S.]

Sealed and delivered by William J. Wallace, executor, &c., in presence of—

N. PETERS, JR.
J. B. GOULD.

HARRY WIARD. [L. S.]
WILLIAM R. BULLOCK. [L. S.]

Sealed and delivered by Harry Wiard and Wm. R. Bullock in the presence of—

EDWARD KENT.
FRANK J. WEBB.

(Indorsed:) Pl'ff's Exh. 3, D. F. G., ex'r.

85 COMPLAINANT'S EXHIBIT No. 4.

Terms, July 1st, 1885.

CANANDAIGUA, N. Y., *March 31st*, 1885.

Messrs. White, Bonker & Hager, Auburn, N. Y., bought of J. S. Robinson & Son, manufacturers of Robinson's patent chilled and carbonized plows, with new improvements.

Ordered by letter. Date, March 27, 1885. O. B., page 397. P. B., page 261.

48 No. 1 pl. points Syr. 78, 50	$24 00
40 %	9 60
	$14 40

Please send back the 78 points you have right away, so your account will stand correct on our books; as it is now, the above is charged beyond the other bill.

(Indorsed:) Pl'ff's Exh. 4, D. F. G., ex.

COMPLAINANT'S EXHIBIT No. 6.

List of Parts Manufactured by J. S. Robinson & Son, Canandaigua N. Y., Fitting Syracuse Plows.

Series of 1876 and 1877.

No. 1. 2-horse plain point for wooden key.
86 " 2. " " " " " " "
" 10. 3-horse " " " " " "
No. 1. 2-horse colter " " " " " "
" 2. " " " " " " "
" 10. 3-horse " " " " " "

No. 1. 2-horse main landslides.
" 2. " " "
" 10. 3-horse " "
" 1. 2-horse land strips.
" 2. " " "
" 10. 3-horse " "
Jointer points, either heavy or light.
Jointer mold-boards.

For the above series we make a point for the No. 1, No. 2, and No. 10, either plain or colter, which can be attached to plow with a bolt instead of a wooden key, thereby saving the farmer the annoyance of making keys. These points we term "button points," as per price-list. Farmers will find these points a great saving in time and labor of making keys, which do not always keep the point tight on the plow.

Series of 1878 and manufactured to date.

No. 1. 2-horse plain point for bolt.
" 2. " " " " "
" 10. 3-horse " " " "
" 1. 2-horse colter " " "
" 2. " " " " "
" 10. 3-horse " " " "
" 1. 2-horse land strips.
" 2. " " "
" 10. 3-horse " "
Jointer points.
87 Jointer points, 1880.
Jointer mold-boards.
No. 1, this series, will fit—
No. 12, wood beam, } plows.
No. 8, steel " }
No. 2, this series, will fit—
No. 11, steel beam, } plows.
No. 13, wood " }

For all of the above plows we can furnish wheels and jointers, which are made to fit our style of plows, but can be used on the above plows.

Yours truly, J. S. ROBINSON & SON.

Canandaigua, N. Y., January 1st, 1885.

(Indorsed:) Pl'ff's Exh. No. 6, D. F. G., ex'r.

COMPLAINANT'S EXHIBIT 7.

John S. Robinson. Edson C. Robinson.

Office of the Robinson Chilled Plow Works, J. S. Robinson & Son, prop's; manufacturers of hand and sulky plows.

CANANDAIGUA, N. Y., *March* 19, 1886.

Mess. C. H. & E. D. Brigham, Palmyra, N. Y.

GENTS: We hope to be able to contract with you for the sale of our goods. Don't be afraid as to the matter of our supplying you all the fixtures you want. If necessary we will make patterns for the 1880 series, so we can supply you, and our No. 1 1878 fixtures will fit their present Nos. 12 wood beam and 8 steel beam, and the No. 2 1878 fixtures will fit their present Nos. 11 steel-beam and 13 wood-beam plows, so we are all in shape to fully protect you.

We would wish to know soon as is possible if you are coming with us, so we can make the 1880 series of patterns.

We have 7 different styles of plows now and we can give you any style you want.

Trust we may hear from you soon.

Yours very truly, J. S. ROBINSON & SON.

(Indorsed:) Pl'ff's Exh. No. 7, D. F. G., ex'r.

88 *Defendants' Testimony.*

United States Circuit Court, Northern District of New York.

THE SYRACUSE CHILLED PLOW CO.
vs.
J. S. ROBINSON *et al.*
} In Equity. No. 5641.

It is hereby stipulated by and between the parties herein that defendants' proofs for final hearing in the above-entitled action may be taken under and pursuant to the 67th rule, as amended, before C. D. Kiehel, notary public and special examiner, on the 14th day of February, 1888, at 10 a. m., at No. 54 Reynolds Arcade, Rochester, N. Y., and that an order to the same effect may be entered *nunc pro tunc*.

Dated at Rochester, February 14th, 1888.

J. J. GREENOUGH,
Compl't's Solicitor.
GEO. B. SELDEN,
Def'ts' Solicitor.

89 United States Circuit Court, Northern District of New York.

THE SYRACUSE CHILLED PLOW CO.
vs.
J. S. ROBINSON *et al.*
} In Equity. No. 5641.

Defendants' Testimony.

Pursuant to the stipulation which is hereto annexed, proofs for final hearing were taken by the defendants under and pursuant to the 67th rule, as amended, before C. D. Kiehel, notary public and special examiner, on the 14th day of February, 1888, at 10 o'clock a. m., at No. 54 Reynolds Arcade, Rochester, N. Y.

Present: J. J. Greenough, Esq., and E. C. Wright, Esq., appeared for the complainant; George B. Selden, Esq., appeared for the defendants.

The defendants' solicitor offers in evidence certified copy of the file-wrapper and contents in the matter of the letters patent No. 231,810, granted James L. Judd, dated August 31st, 1880, for improvement in plows, and the same is received and marked "Defendants' Exhibit Judd File-Wrapper and Contents."

90 The defendants' solicitor offers in evidence printed office copy of United States letters patent No. 193,923, dated August 7th, 1877, granted to Benjamin F. Chandler for improvement in plows, and the same is received and marked "Defendants' Exhibit Chandler Patent."

The defendants' solicitor offers in evidence printed office copy of United States letters patent No. 142,074, dated August 26th, 1873, granted to James F. Benton for improvement in plows, and the same is received and marked "Defendants' Exhibit Benton Patent."

The defendants' solicitor offers in evidence printed office copy of United States letters patent No. 164,952, dated June 29th, 1875, granted to Lewis B. White for improvement in plows, and the same is received and marked "Defendants' Exhibit White Patent."

The defendants' solicitor offers in evidence certified copy of the file-wrapper and contents in the letters patent No. 164,952, granted Lewis B. White, dated June 29th, 1875, for improvement in plows, and the same is received and marked "Defendants' Exhibit White File-Wrapper and Contents."

The defendants' solicitor offers in evidence printed office copy of United States letters patent No. 115,543, dated May 30th, 1871, granted to Robert Themar and Brand Brothers for improvement in plows, and the same is received and marked "Defendants' Exhibit Themar Patent."

The defendants' solicitor offers in evidence printed office copy of United States letters patent No. 220,373, dated October 7th, 1879, granted to Levi W. Hall for improvement in plow points, and the same is received and marked "Defendants' Exhibit Hall Patent."

91 The defendants' solicitor offers in evidence printed office copy of United States letters patent reissue No. 1515, dated August 4th, 1863, granted to Paul Dennis for improvement

— cultivators, and the same is received and marked "Defendants' Exhibit Dennis Reissue."

The defendants' solicitor offers in evidence printed office copy of United States letters patent, dated March 17th, 1834, granted to Richard B. Chenoweth for improvement in plows, and the same is received and marked "Defendants' Exhibit Chenoweth Patent."

The defendants' solicitor offers in evidence printed office copy of United States letters patent No. 78339, dated May 26th, 1868, granted to Gabriel Utley for improvement in plows, and the same is received and marked "Defendants' Exhibit Utley Patent."

The defendants' solicitor offers in evidence printed office copy of United States letters patent No. 140,004, dated June 17th, 1873, granted to T. E. C. Brinley for improvement in plows, and the same is received and marked "Defendants' Exhibit Brinley Patent."

LEWIS B. WHITE, a witness offered on behalf of the defendants being duly sworn, testified as follows:

By Mr. SELDEN:

Q. 1. What is your name, age, residence, and occupation?

A. My name is Lewis B. White; my age, 44 years; my residence, Norfolk, Va., and my occupation is manufacturer of agricultural implements.

Q. 2. Have you been at any time engaged in the manufacture of plows; and, if so, for how long?

A. Yes; I have for about ten years as clerk and ten years as proprietor.

Q. 3. What was the name of your firm before you became proprietor?

A. S. March & Co.

92 Q. 4. Are you the inventor and patentee of the improvement in plows described in letters patent No. 164,952, dated June 29th, 1875, "Defendants' Exhibit White Patent"?

A. Yes, sir; I am the inventor.

Q. 5. State whether or not you or your firm at any time manufactured and sold plows constructed in accordance with your patent, having a rib on the frame or standard fitting a recess in the edge of the point and mold-board; and, if so, state when you commenced such manufacture of such plows, and state the extent of the said manufacture.

Objected to as calling for a conclusion—incompetent.

A. Such a plow was made by S. March & Co., and the manufacture of which began in about January, 1875, and as to the extent of the manufacture you can safely put it down as a 1,000 of the plows complete and not less than 25,000 of the points and mold-boards so recessed. S. R. White & Bro., the successors of S. March & Co., of which firm I am a partner, now make plows in accordance with my patent, No. 164,952, and rejected claim 4 in original application for patent.

Q. 6. Did March & Co. make these plows themselves; and, if not, by whom were they made?

A. The castings were made by Charles T. Palmer, of Richmond, Va., and the wood work was done and the plows completed by S. March & Co.

Q. 7. Who was foreman for Charles T. Palmer at the time these plows were made for March & Co.?

A. J. T. Moxley.

Q. 8. Can you produce copies of any correspondence between March & Co. and Charles T. Palmer? And, if so, please do so.

93 Objected to as incompetent and hearsay.

A. Here are letter-press copies from July 17th, 1874, to October 15th, 1875, and from Oct. 15th, 1875, to Feb. 3rd, 1877.

Q. 9. Please produce any letters in these books relating to the manufacture of your patented plow between March & Co. and Charles T. Palmer, and state in whose handwriting it is.

Objected to as hearsay and incompetent and as being letters or correspondence between third parties, in which plaintiff was not in any way interested and to which it was not a party.

A. I produce press copy of letter written by myself to Charles T. Palmer, Richmond, Va., dated July 24th, 1875.

The letter-press copy of said letter removedfrom the book, and the same is offered in evidence by defendants' solicitor. Complainant's solicitor objects to the introduction of said letter upon the same grounds as last above stated, and on the further ground that this letter appears to be a copy and the original has not been produced and no effort made to produce the same.

The letter is received and marked "Defendants' Exhibit White Letter, July 24th, 1875."

Q. 9½. In whose possession has this book from which the "Defendants' Exhibit White Letter" was taken been since July, 1875?

A. In the possession of S. March & Co. to August, 1877, and since that time in possession of S. R. White & Bro.

Q. 10. Was the original of this letter mailed by you to Charles T. Palmer at Richmond, Va., on or about July 24th, 1875?

94 A. I can't say that it was mailed by me. It was not my duty to mail letters. I might add that the information contained in that letter was acted upon—that is, the castings were made to fit in compliance with the instructions contained in the letter.

The latter part of the answer objected to as not responsive to the question, as incompetent, as being transactions between third parties in which the plaintiff was not interested.

Q. 11. Do you know what has become of the original of this letter?

A. I do not.

Q. 12. Is Charles T. Palmer still in business?

A. He is not; he failed about two years ago.

Q. 13. Do you know what has become of Mr. Palmer's books and papers?

A. I do not.

Q. 14. State whether or not the letter "Defendants' Exhibit White Letter, July 24th, 1875," enables you to say positively that March & Co. were engaged in the manufacture and sale of plows containing your invention of the rib on the plow frame and the corresponding recess in the point and mold-board in July, 1875.

A. It does.

Q. 15. State whether or not in your application for your patent No. 164,952, June 29th, 1875, as originally filed, you made a claim to the feature of the rib on the frame and the recessed point and mold-board; and, if so, please read from the "Defendants' Exhibit White File-Wrapper and Contents" any claim therefor.

A. I did. It is the 4th claim, "the rib '*m*' on the wing
95 of the frame in combination with recesses '*n*' in the share and mold-board, substantially as and for the purposes herein set forth."

Q. 16. State whether or not the said claim was erased from your said application; and, if so, why this was done.

Objected to for the reason that the White wrapper already in evidence shows for itself what was done in the Patent Office and the reasons therefor, and immaterial, and the witness cannot state any reasons not contained in said wrapper.

A. It was done upon references made by the Patent Office, which were satisfactory to my attorney, but not to myself.

Q. 17. On the receipt of your patent did you immediately write to your attorney; and, if so, what did you say to him?

Objected to as hearsay; transactions between the gentleman and his attorney are not competent as against this plaintiff; objected to further that the letter should be produced.

A. I objected to the patent on account of the claims being too narrow, some of the original claims having been entirely omitted and having allowed the patent to go to issue without first submitting the objections to me. That letter was placed in the hands of Messrs. R. F. & A. P. Lacey, of Washington, D. C.

This testimony is objected to as incompetent when he states that it was placed in their hands and as hearsay unless he himself gave it to them.

I know that this letter was in their hands because they used it to make a reissue upon certain of my patents, and that such a letter was written. I introduce a letter from C. H. Watson to L. B. White, myself, dated July 17th, 1875, which speaks for itself.

Letter produced by witness offered in evidence by defendants' solicitor.

96 Objected to as incompetent, hearsay transactions between third parties, in which plaintiff is not interested.

The same is received and marked "Defendants' Exhibit Watson Letter, July 17th, 1875."

Q. 18. State whether or not Watson & Co. took any steps to secure a reissue of your patent No. 164,952, as stated in that letter.

Objected to as incompetent, hearsay transactions between third parties, in which the plaintiff is not concerned.

A. I don't know that they did. I called on them about 12 months after the date of the letter and they promised to do so.

The latter part of the answer objected to on the same ground as last above stated.

I left the matter in their hands for quite a considerable time, believing they would take proper care of me. Some time after I went to Washington to see Watson & Co. and found Mr. Watson was dead; hence I do not know whether he took any steps or not.

Complainant's solicitor moves to strike out this last testimony as not responsive, as hearsay, and transactions had with other parties in which plaintiff was not concerned, and irrelevant to the matters at issue.

Q. 18½. Can you produce a plow made in accordance with your invention, as shown in your patent June 29th, 1875? And, if so, please do so, and state where and under what circumstances said plow was made.

A. I can produce a plow made as specified in rejected claim 4, above referred to.

Witness produces the plow, and says:

The pattern from which the point on plow was cast was made in 1875. The pattern for mold-board on the plow was made in the latter part of 1877 or the first part of 1878.

97 The plow standard, point, and mold-board produced by witness offered in evidence, and the same *is* received and marked respectively "Defendants' Exhibit White Plow Frame A," "Point B," and "Mold-Board C."

Defendants' solicitor also offers in evidence mold-board marked "S. March & Co., Atlas No. 4," and point, and the same are received and marked "Defendants' Exhibit Mold-Board D" and "Defendants' Exhibit Point E."

Witness continues: The mold-board D and point E were made in 1875 with the recess as they are now.

The letter marked "Defendants' Exhibit White Letter, July 24th, 1875," refers particularly to this mold-board and refers also to the plow.

Recess until 2 p. m.

2 P. M.

Parties appeared as before, and witness continued:

Q. 19. Referring to your letter, Defendants' Exhibit White Letter,

June 24th, 1875, I see you ordered 50 No. 1 A moulds cut out as above and 50 No. 2 A moulds. State whether or not these castings were recessed to fit a rib on the plow frame.

A. They were.

Q. 20. By whom were the patterns made for these plows containing the invention of your 4th claim of your original application?

A. They were cut out and adapted to receive the rib on the standard by J. T. Moxley. The patterns were made in Baltimore in 1873.

Q. 21. Have you examined letters patent No. 231,810, dated August 31st, 1880, issued to James L. Judd, for improvement in plows; and, if so, do you understand the inventions therein described and claimed?

98 A. I have, and I understand them as set forth in the specification and claims.

Q. 22. Please state whether or not "Defendants' Exhibits White Plow Frame A, Point B, and Mold-Board C" contain the invention claimed in the second claim of said Judd patent, giving your reasons for any opinions you may express.

A. This exhibit has a rib on the wing of the standard, and the meeting edges of the point and mold-board are recessed to engage with the rib upon the wing of the standard, and I find all of these elements in claim two of Judd's patent.

Q. 23. Please compare the invention claimed in the second claim of the Judd patent with the invention set forth in your own patent of June 29th, 1875, and specified in the original 4th claim thereof. State wherein they resemble or differ from each other, giving your reasons for any opinions you may express.

A. Claim four has the rib on the wing of the standard, and the plow castings which are bolted thereto are recessed to engage with the rib. In the second claim of the Judd patent I find the same rib on the wing of the standard, and I find the castings bolted thereon are recessed to engage with said rib, shown in Fig. 4 of Judd's patent and shown also in Fig. 5 of L. B. White's patent, No. 164,952. The only difference I can see between the two is that one rib is longer than the other, and the length of the recesses of the castings in the one is longer than the other. In both cases the recesses in the casting engage with the sides and the crown of the rib on the wing of the standard.

Q. 24. Please read from the specification of the White and the Judd patents any passages descriptive of the objects or functions of these ribs and recesses.

99 Objected to for the reason that the patents speak for themselves and as immaterial.

A. In the Judd patent it reads as follows: "Along the lines of junction of the superimposed plates there is a bead or rib, a projection from the seat on which the plate or plates rest, and along the meeting edges of the point (see Fig. 1) and other parts the under or inside is chamfered off at the meeting edges *b* to fit said rib '*a*," as is clearly seen on the figure on the drawings, by which the edge at

the joint is made thin so as to be readily and expeditiously ground and fitted with a minimum amount of labor, while the thin edges, when in place, are firmly sustained by the rib as aforesaid, as is clearly illustrated in figure 4, which also aids to keep the parts steadily in place when screwed together."

From White's patent I read as follows:

"On the wing of frame 'B' is formed a rib '*m*,' which comes directly at the junction of the share and mold-board and fits in recesses '*n*' made in their edges for that purpose. This rib acts as a guide in putting on the share and mold-board and in drilling and reaming the bolt holes therein. It also acts as a stop for the share and mold-board, so as to relieve the bolts which fasten the same from undue strain and to prevent the twisting of either share or mold-board. This is of great importance from the fact that both the share and mold-board are each fastened only by a single bolt."

Q. 25. Please compare Fig. 5 of the White patent with said Fig. 4 of the Judd patent and state whether or not the figures are not identical, except that the rib in the Judd patent is rounded in cross-section and the rib in the White patent is square.

A. They are just as stated in the foregoing question.

100 Q. 26. Fig. 6 of the drawings in the White patent is stated in the specification to be a "detached view." Please examine said Fig. and state what kind of view it is.

A. It is a side view of the wing of the standard showing the end of rib on same; also showing the under side of the point with a recess at its meeting edge, said recess engaging with the rib on the wing of the standard.

Q. 27. State whether or not said Fig. 6 of the White patent shows the rib as extending to the outer edge of the wing of the standard or frame.

A. Fig. 6 shows the rib extending to the outer edge of the wing of the standard; also shows the recess portion of the point extending beyond the rib.

Cross-examination by J. J. GREENOUGH:

X Q. 28. Do you consider yourself an expert in machinery and mechanical matters?

Objected to as incompetent and irrelevant, as the witness has only been examined as to a small detail in the construction of plows, with which it appears from his testimony that he has been familiar for the last 12 or 15 years, having taken out a number of patents relating to plows.

A. I do not—not in mechanical matters generally. I do in plows.

X Q. 29. Have you ever testified in patent cases heretofore; and, if so, where, when, and in what case?

Same objection.

A. Will the question please state the copes of patent cases, so I may answer?

X Q. 30. I ask you the question for that precise information.

A. I have testified in an interference suit in my own behalf.

101 X Q. 31. Have you ever testified in any case in court where patents were involved?

Same objection.

A. I have not in the United States circuit court.

X Q. 32. Have you ever had any experience in comparing patents and their claims?

A. I have.

X Q. 33. What patents?

A. The patents of P. H. Stark, for plows, of 1871, I think. I can't give the dates, and my patent of 1886, when suit was proposed against S. R. White & Bro. as violating the said patent of Stark.

We have taken action against Latta & Myatt, Gill, and others, of Raleigh, N. C., for violation of my own patents. I have also examined my patents and compared them with other supposed infringements.

X Q. 34. Do you consider yourself competent to decide the legal force of a patent and claims for an invention in a patent case?

Same objection.

A. In a plain case, as that of the White and Judd patent, where all of the elements are identically the same and where much of the descriptive matters in the specification is alike, I consider myself capable.

Objected to as irresponsive to the question and as giving an opinion not called for.

X Q. 35. In making your original application for the White patent No. 164,952, June 29th, 1875, did you fully describe and represent your invention and the purposes for which it was made?

A. I did.

102 X Q. 36. In the description and representation in your original application for a patent did the element that you described as a rib extend over the surface of the standard more than one-fourth of the whole line of junction between your mold-board and your point?

Objected to as irrelevant and immaterial.

A. I don't remember that so exactly as the question would have me state.

X Q. 37. Please look at Fig. 4 in your patent and state whether that recess covers more than one-fourth of the whole line of junction of the mold-board and point.

A. That appears to be about the distance it covers. I have no rule to measure. The figure shows for itself.

X Q. 38. Did the rib exceed in length the recess?

A. Oh, no; it wouldn't fit if it did; the mold-board would not go on the standard if the rib was longer than the recess.

X Q. 39. Have your plows, made since the granting of your patent, been made, so far as the recess is concerned, like the recesses

shown in "Defendants' Exhibit White Plow Frame A, Point B, Mold-Board C, and Def'ts' Exhibit Mold-Board D, and Def'ts' Exhibit Point E"?

A. Substantially the same.

X Q. 40. In what, if anything, do they differ?

A. I know of no substantial difference.

X Q. 41. The rib "*m*" on the standard has never been made longer than those recesses, has it?

A. It has in large two-horse plows. The relative sizes being considered, the ribs are about the same. We never regarded the length of the rib as pertinent to the invention or construction.

X Q. 42. Your recess was intended to be made to fit the rib for the purpose of locking, as stated in your patent, was it not?

103 A. I made no such statement in my patent. It was made for the purpose of supporting the mold-board and points.

X Q. 43. The recesses and rib in your patent were made for the purpose of acting as a stop for the share and mold-board, so as to relieve the bolts which fasten the same from undue strain and to prevent the twisting of either share or mold-board, were they not?

A. I read that from my patent in my direct testimony; yes.

X Q. 44. If the meeting edge of your point was required to be ground off along its whole line, with the exception of the short distance covered by the recess, it would have to be ground off its whole thinkness, would it not?

Objected to as irrelevant and immaterial.

A. It would have to be ground off to the thickness of the mold-board, as the point is thicker than the mold-board.

A. I will state I have never had any occasion to grind them at all. The castings are made to fit without grinding. If the castings were imperfectly made, then they would have to be ground, as the foregoing question indicates. In a larger plow we grind the mold-board as suggested in the foregoing question. We don't grind the point.

X Q. 45. If the meeting edges were ground off to any extent it would necessitate the grinding off of the rear edge of the recess in order to bring the meeting edges in contact, would it not?

A. The recess in the point has not much depth, because it is not to be ground. The recess in mold-board has increased depth, so that it can be ground without grinding out the recess. There is sufficient depth in the recess of the point to take off any enlargement or imperfection that might occur in moulding.

104 X Q. 46. You have never made a point or mold-board with the meeting edges thinned throughout their whole length?

A. I have not to engage with the ribs, as in this particular construction.

X Q. 46. When you took out your patent under consideration had you any knowledge and experience of chilled plows?

Objected to as irrelevant and immaterial.

A. I can't remember distinctly. I don't know whether I had seen chilled plows made of cast iron or not.

Redirect examination by Mr. SELDEN:

R. D. Q. 47. State the reason why you did not carry the recess the full length of the meeting edges in your construction?

Objected to as immaterial, improper.

A. Because I was told by Mr. Moxley, the foreman at the foundry where the castings were made, that it would be more difficulty to cast the rib across the entire face of the standard wing, and the recessing of the point would tend to weaken it at the bolt-hole.

R. D. Q. 48. When was this?

A. In the early part of 1875; January, I think.

The last answer objected to as bringing in matter not noticed in the answer and consequently inadmissible.

R. D. Q. 49. Did you consider then or have you at any time since considered that there was any patentable invention in making the ribs and recesses shorter or longer?

A. If there was a patentable novelty in a longer rib it would not prevail as against a short rib located at the junction of the
105 point and mold-board, the latter recessed to engage with said rib as shown in White's patent, June 29th, 1875.

R. D. Q. 50. State whether or not there is any benefit or advantage secured by the construction covered by the second claim of the Judd patent which is not also secured by the construction shown in your patent and specified in the 4th claim of the original application therefor.

Objected to as it calls for an opinion of an expert, which the witness is shown he is not.

A. I can see none, as all elements in one exist in the other.

Plow point produced and the same is shown witness.

R. D. Q. 51. Please compare this point just produced, marked "F," with "Defendants' Exhibit White Plow Point B," and state whether or not there is any difference between the two points, except that one is larger than the other?

Same objection.

A. Both are recessed at their meeting edges between the hole for the securing bolt and the flanges on their outer ends. The point produced, marked F, has another recess along its meeting edge, beginning on the other side of the bolt-hole and extending to its upper edge. Both are of full thickness opposite the bolt-hole. White's point has a triangular recess or bevelled edge at its extreme upper end. Both of the points are, in fact recessed on either side of the bolt-hole at their meeting edges and both points preserve their full thickness over the bolt-hole.

R. D. Q. 52. How is the point just produced marked?

A. I can see "2 C patent, Aug. 31, 1880."

The examination of Lewis B. White was here suspended.

106 HENRY L. CUMMINGS, being called for defendant and being duly sworn, testified:

Q. 1. What is your name, age, residence, and occupation?

A. Henry L. Cummings; my age is 49 years; residence, Castile, Wyoming Co., N. Y., and occupation, manufacturer of plows.

Q. 2. I call your attention to a plow point now on the examiner's table and ask you if you know where it was obtained?

A. I should say it was the point I have just purchased at Mr. Kingsley's store in this city. I asked for a No. 1 Syracuse point, but I couldn't get that. He only had a No. 2, and I bought this point.

Q. 3. This is the point referred to by the witness Mr. White in answer to Re-D. Q. 51 and 52?

A. Yes.

Q. 4. How long have you been in the plow business?

A. 22 years. I have carried on the business myself that time. I have been at it 35 years.

Q. 4½. How long have you made plow points which were thinned toward the meeting edge?

Objected to as leading and not within the pleadings, incompetent.

A. Do you mean thinner on the meeting edge than in back?

Q. 5. That is just what I mean.

A. We have made one plow that I know of 12 years; the year 1876; I am not positive about others; I think we have made them.

Q. 6. How thick were these points of your '76 plows at the meeting edge?

107 A. My impression is they are one-fourth of an inch.

Q. 7. How thick was the body of the point?

A. I think about one-half inch.

Q. 8. They were then uniformly thinned down from one-half inch to one-fourth inch at the edge?

A. I should say that it was; I am not positive. I should say in some places it was a half an inch thick.

Cross-examination by Mr. GREENOUGH:

X Q. 9. These '76 plows are not chilled plows?

A. No, sir.

X Q. 10. You now make chilled plows?

A. Yes, sir.

X Q. 11. Will you swear that the edges of these points were not more than one-fourth of an inch thick at the meeting edge?

A. My impression is that they were not more than one-fourth of an inch.

X Q. 12. This was an ordinary cast point which you made, you have testified about?

A. Yes, sir.

X Q. 13. How many of these have you made?

A. I couldn't say.

X Q. 14. Did you ever grind the edges of those plow points in fitting them up?

A. No, sir.

HENRY L. CUMMINGS.

108 STATE OF NEW YORK, *County of Monroe,* } ss:

On this the 14th day of February, A. D. 1888, before me personally appeared Henry L. Cummings, who subscribed the above deposition and made oath that the same is the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

Adjourned, by consent, to 9.30 a. m., same place, February 15th, 1888.

9.30 A. M., *February 15th*, 1888.

Parties appeared as before.

The redirect examination of LEWIS B. WHITE resumed by Mr. SELDEN:

R. D. Q. 53. Referring to the point marked "F," to which your attention was called last night, please examine it and state whether or not it is chilled.

A. It is chilled upon the cutting edge.

R. D. Q. 54. With that exception it is unchilled?

A. The body of the point is unchilled, and its upper or meeting edge is not chilled.

R. D. Q. 55. Please examine the said point and state whether or not it corresponds with Fig. 1 of the Judd patent in that its recess is continuous along the meeting edge; and, if not, describe it fully.

A. Fig. 1 of the Judd patent has a continuous and uninterrupted recess at "*b*" on its upper or meeting edge. In Exhibit F the recess on the upper or meeting edge is interrupted immediately above the bolt-hole and has not a continuous recessed meeting edge. Exhibit F retains its full thickness at the bolt-hole.

R. D. Q. 56. Do you find that Exhibit F has been ground in the recesses?

109 A. As far as I can see, it has not.

R. D. Q. 57. State whether or not the said point has been ground on its edge.

A. It is ground both upon the thin and thickened portions.

R. D. Q. 58. Referring to the plow points made by S. March & Co., as testified to by you, state whether or not the height of the rib was so proportioned to the depth of the recess that the edge of the point was supported by the rib.

Objected to as calling for a conclusion, as the patent is in evidence and the exhibits are in evidence and speak for themselves, and the witness cannot theorize as to how these things were done, as incompetent and improper.

A. That was the intention in the construction of the original patterns, and the recessed edges of both the point and mold-board appear to rest upon the crown of the rib of Defendants' Exhibit White Plow. The exhibit speaks for itself. It is difficult to make a rib in practice upon the wing of a plow standard and the recess on the meeting edges of the point and mold-board so that the recesses will at all times bear and make a close joint with the crown of the rib.

This answer is objected to as not responsive.

Recross-examination by Mr. GREENOUGH:

R. X Q. 59. In placing the rib upon your standard on the line of the junction of the mold-board and point for the purpose of aiding the bolts that fasten the parts together you placed it there to avoid making two independent projections upon the standard for the separate parts, did you not?

A. At the time I made this plow——

Objected to as not responsive.

110 —I don't remember having seen a plow with two of such projections, but two such projections as is indicated in the question would, I think, serve the purpose of my single projection or rib for the purpose of a stop to the mold-board and point.

R. X Q. 60. Have you had any experience in chilled-iron castings? And, if so, please state what experience you have had.

A. We make chilled castings. Our foundry is in the charge of a foreman whose business it is to look after the products of the foundry, hence I know but little as to the methods of producing the chilled castings. I know, however, the face of the mold-boards are formed by pouring the iron upon a metal chill conforming to the shape of the pattern, instead of pouring the hot metal in the sand, as is done in making ordinary gray iron castings. I know that when chilled castings are made, as I state, it is difficult to abrade the surface with a file, when the contrary is the fact respecting gray iron castings.

R. X Q. 61. You have stated in your redirect examination that Defendants' Exhibit "F" was chilled on one edge and that it was not chilled on the other. How did you ascertain that fact?

A. The cutting edge bears the impress of the metal chill upon which the iron was poured. Its body bears the impress of the sand upon which the hot metal was poured, the sand still adhering to the body. I have also tested the meeting edge and cutting edge in presence of the parties present with a file, as indicated in my previous answer, and find the meeting edge unchilled, while the cutting edge is chilled.

R. X Q. 62. Have you examined both sides of the casting, Exhibit "F," and do you find sand marks on both sides?

111 A. The face of Exhibit "F" has been ground. This is my opinion, and the facts are patent from the article before me; but the recess for bolt-hole appears to be made with a sand core instead of a metal chill, which latter is sometimes used for making apertures for the securing bolt in plow castings.

R. X Q. 63. The face of Exhibit "F" having been ground, as you state, it would be impossible to say whether the casting had been made upon a chill or not from any appearance upon the face of the casting?

A. It would be difficult to say and it could not be truly said whether it was made in the sand or upon a chill, but I think it would be difficult to run the cutting edge of the share between two metal chills and form so perfect a cutting edge.

R. X Q. 64. In castings of varied thickness having extremely thin edges some parts would be harder on the thin portion than on the thicker parts if cast in an ordinary sand mold, would it not?

A. Yes, sir; that is——

R. X Q. 65. They would also be harder if the whole casting was cast upon a chill?

A. Not necessarily so, I think, if the chill is of sufficient thickness and the metal of proper consistency of which the point is formed. I think the point, if chilled all over, would be as hard in its body as at its edge. In making chilled castings it is the custom to temper them so as to soften and increase their tenacity, and a casting thus treated the edges should receive the same benefit as the body, and the entire casting be of the same density and hardness in all its parts.

R. X Q. 66. Would it be possible, with a chilled casting, to temper parts thereof without affecting other parts?

112 A. It might be done, but I know of no process by which it could be accomplished. In my experience with chilled plows the great desideratum is to have the entire casting of uniform hardness.

R. X Q. 67. It would be possible to chill the whole casting and chill one portion harder than the whole?

A. That result is often attained without being the intention of the process of making.

R. X Q. 68. I understand you to say that you are not practically cognizant in making chilled castings that are made in your works; am I correct?

A. Practically, I am not; theoretically, I am. It is my custom, in company with the foreman, to examine nearly every cast, break some of the castings produced to see if the metal used is of proper consistency to chill with uniform hardness. I am not a moulder and can't do the practical work.

R. X Q. 69. Have you ever seen any castings made upon a chill softer in some parts than in others?

A. Yes; but not by design, but the result of accident.

The latter part of the answer objected to as irresponsive, and complainant's counsel moves to strike the same out.

R. X Q. 70. If it sometimes occurs that a casting made upon a chill is of unequal hardness in its different parts, it might be possible to make it in that way by design, might it not?

A. It could be made hard upon one surface and soft upon the other surface; this would depend very much upon the thickness of

the casting and the thickness of the chill used, hence it would be possible to make a casting as suggested in the question.

113 Recross-examination continued.

By Mr. WRIGHT:

R. X Q. 71. Will you swear that in all of your plows the rib supports the recess?

A. I would not.

R. X Q. 72. Will you swear that is the case in the majority of your plows?

A. I would not.

R. X 73. If it did support the recess would it not be an accident?

A. It would not.

R. X Q. 74. It would be so from design?

A. It would, in constructing the patterns that was the design.

The latter part of the answer moved to be stricken out as not responsive.

R. X Q. 75. All of your plow castings for each of your sizes are made from one pattern, are they not?

A. They are not.

R. X Q. 76. Are they made from one original wooden pattern?

A. All castings that are identical are made from the same original. Changes are often made in the metal pattern after the metal pattern has been made from the original. Our originals are made of plaster; hence cannot be preserved with certainty.

Complainant's counsel moves that the answer be stricken out as not responsive.

R. X Q. 77. You said yesterday, did you not, that the pattern from which this mold-board was cast was made in 1875?

A. I did not. I refer to Defendants' Exhibit White Plow Mold-Board B.

114 R. X Q. 78. When was the pattern from which that mold-board was cast made?

A. In the latter part of 1877 or the first part of 1878, I think.

R. X Q. 79. The pattern from which this mold-board was cast was made in the latter part of 1877, you think?

A. 1877 or the first part of 1878.

R. X Q. 80. Have there been any alterations or changes made in that pattern from which this mold-board was cast?

A. I know of no material changes; and, in fact, know of none at present.

R. X Q. 81. You will not swear that there have been none?

A. I will swear, to the best of my knowledge and belief, that there has been none.

R. X Q. 82. There might have been changes without your knowledge?

A. Not probable any material changes have been made without

my knowledge. I superintend the manufacturing department, and it is my business to look into and direct all material changes.

The answer moved to be stricken out as not responsive.

R. X Q. 83. Who made the model for the mold-board in question?

A. J. T. Moxley, I think, made the iron model or pattern from which the casting was made. H. J. Williamson, I think, made the original plaster pattern.

R. X Q. 84. Who was Charles T. Palmer, of Richmond?

A. He was a manufacturer of agricultural implements and plow castings.

115 R. X Q. 85. And he manufactured plow castings for you?

A. He manufactured them for S. March & Co., the predecessors of our firm, and he has also manufactured for the present firm.

R. X Q. 86. Where is Charles T. Palmer now?

A. Charles T. Palmer failed in business about two years ago and has left Richmond, and I understand lives on a farm in Virginia somewhere.

R. X Q. 87. Did he use the same models that were afterwards used, either by your own firm or any other firm, in making castings for your plows?

A. In many instances he did.

R. X Q. 88. Do you know whether he used the same models that were used to make Exhibits White Plow A, B, and C?

A. I do.

R. X Q. 89. Do you know that the model that he made as a result of your letter dated July 24th, 1875, marked Defendants' Exhibit White Letter, of that date, were the same models from which Defendants' Exhibits White Plow A, B, and C were made?

A. He made no model. He was instructed to recess the models or patterns that were already with him, and I think Exhibit "D," marked No. 4 on the back, was one of the models or patterns referred to in that letter.

R. X Q. 90. Was the pattern from which "D" was made referred to in that letter?

A. I think it was. It is recessed in accordance with the instructions in that letter.

R. X Q. 91. Did Mr. Palmer make the pattern or fit up the pattern for Exhibits B, C, and A?

A. He had the iron patterns for C, B, and E fitted up, I think. I don't know as to the other.

116 R. X Q. 92. Did he fit up these patterns as a result of any instructions from you?

A. I gave instructions how they were to be fitted up in person to his pattern-maker and by letter.

R. X Q. 93. What was the name of that pattern-maker?

A. J. T. Moxley.

R. X Q. 94. Where is he now?

A. In this city and in this house.

R. X Q. 95. You say that you gave also these instructions by letter. Where is that letter?

A. Numbers of letters were written, among which is Def'ts' Exhibit White Letter, July 24th, 1875, the instructions contained in which would also apply to C, B, and E so far as recessing the lower edge of the mold-board is concerned.

R. X Q. 96. Then all the instructions that Mr. Palmer had from you with reference to recessing the mold-board and the point was contained in the letter Def'ts' Exhibit White Letter, July 24th, 1875?

A. I can't say positively. The original plaster pattern was recessed, and his duty was to make the recess to fit perfect with the rib. When important patterns were to be fitted I went to Mr. Palmer's foundry in person and usually gave my instructions direct to the pattern-maker, and upon such missions I remained for a week or more at a time—that is, superintending and fitting up of patterns for castings for S. March & Co. and R. S. White & Bro.

The whole of this answer is asked to be stricken out as irresponsive.

Recess until 2 p. m.

117 2 P. M.

Parties appeared as before and witness continued.

Redirect examination by Mr. SELDEN:

R. D. Q. 97. State whether or not March & Co. paid you a royalty on the plows manufactured by them under your patent dated June 29th, 1875.

Objected to as incompetent and hearsay; transactions between third parties.

A. They did.

R. D. Q. —. Had you any personal acquaintance with Messrs. Robinson or their attorney before this week?

A. I had not. I had correspondence with them. I can't say just how long it is; about 12 months ago they wrote to me.

LEWIS B. WHITE.

STATE OF NEW YORK, }
County of Monroe, } *ss:*

On this the 15th day of February, A. D. 1888, before me personally appeared Lewis B. White, who subscribed the above deposition, and made oath that the same is the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

WILLIAM J. MACK, a witness called on behalf of the defendants, being duly sworn, testified as follows:

By Mr. SELDEN:

Q. 1. What is your name, age, residence, and occupation?

A. My name is William J. Mack; my age, 48 years; my residence, Canandaigua, N. Y., and my occupation mechanical engineer of the Canandaigua water works.

118 Q. 2. What experience have you had as a mechanical engineer?

A. I have been engineering ever since I have been eighteen years old. My first experience was running a steamboat on Canandaigua lake when about eighteen years old. My next experience was United States Navy as engineer. My next experience was putting up and running the machinery in a large paper mill on Long island. My next experience is running a machine shop in business for myself. The first of January, this year, I accepted the position of mechanical engineer of the Canandaigua water works.

Q. 3. Have you examined any plows made by the Syracuse Chilled Plow Company? And, if so, please state when and where.

A. Six plows at Palmyra, three plows at Clifton Springs; but the exact date I can't say. It is all since the 8th day of January, 1888.

Q. 4. At whose place of business were these plows when you examined them?

A. At Palmyra I have forgotten the firm. At Clifton Springs the gentleman's name was Fox.

Q. 5. Can you produce one of these plows you saw at Clifton Springs? And, if so, please do so.

A. I can and here produce it.

The plow produced is offered in evidence, and the same is received and marked "Defendants' Exhibit Complainant's Plow."

The plow objected to as not properly identified.

Q. 6. Please examine the said plow and state whether or not the point and mold-board are provided with recesses and the standard with a projecting rib extending along the meeting edges of the point and mold-board.

119 A. Yes; there are recesses in the point and mold-board, and the projection is on the standard.

Q. 7. State whether or not in this plow the recesses in the point and mold-board bear on the rib on the standard when these parts are bolted in place.

A. Not on the crown of the rib.

Q. 8. State whether or not in the other plows that you examined at Clifton Springs and Palmyra the edge of the points and mold-board bore on the ribs of the standards.

Objected to as incompetent; that the plows mentioned are not identified as Syracuse plows.

A. I wish to be understood that they did not bear on the crown of the rib of the standard, with one exception; that was for just one inch towards what I should call the heel or outer end of the rib.

I mean the outer end of the rib; that was on one plow. The rest didn't touch at all. That was at Palmyra.

Q. 9. State whether or not all these plows that you have examined were like this plow produced here and marked in the same way, "Syracuse Chilled Plow Co."

Objected to as incompetent and calling for a conclusion.

A. They were marked "Syracuse Chilled Clow Co.," but I think there were two sizes of plows.

Q 10. Can you identify this plow produced here as the one purchased by you from Mr. Fox?

A. Yes, sir.

Q. 11. How do you identify it?

A. By the shape of the opening over the rib and by the blue chalk I used.

120 Q. 12. State whether or not you tried one of Robinson's points on this plow to see whether or not it would bear on the rib of the standard; and, if so, state the result of such trial.

A. I did try the point and found that it did not.

Q. 13. Where did you get the Robinson point which you used on this trial, and can you produce the same?

Objected to as incompetent and irrelevant; has no bearing on the present case.

A. Mr. Robinson had it in his cutter when he took me with him. I have made a mistake. I have it counfounded with the other trip. We took the points with us on the cars to Clifton Springs, and there is where we fitted that point to Defendants' Exhibit Complainant's Plow. I here produce the point.

Defendants' solicitor offers said point in evidence, and the same is received and marked "Defendants' Exhibit G."

Cross-examination by Mr. GREENOUGH:

X Q. 14. Have you had any experience in the construction of plows?

A. No, sir.

X Q. 15. Was the Robinson point, about which you have just testified, thinned on the edge next the mold-board when placed over the rib by you?

A. I cannot answer without having a pair of calipers; it's so close. The variation is nearly a 32nd of an inch as I can determine by calipers.

X Q. 16. Is not the Robinson point, about which you have testified, inclined upward on the under side towards the edge from the projection around the bolt-hole to the rear part?

Question objected to by defendants' solicitor as indefinite.

121 A. I can't answer in that shape. From the bearing rib to the edge there it seems to be a gradual taper to the amount of the thickness of that pasteboard.

Objected to as not responsive by Mr. Greenough.

I can't answer that question, owing to the shape of the point, which is on a curve. One side is convex and the other concave. The under side is convex and the upper is concave. I take it for granted that this is the upper side (witness pointing to the side coming in contact with the soil).

X Q. 17. In front of the bolt-hole and at the edge of the plow point there is a projection on Robinson's point, is there not?

Objected to as irrelevant and immaterial.

A. Yes, sir.

X Q. 18. Did that projection when you put it onto the plow rest on the general level of the standard seat?

Same objection.

A. I can't say positively whether it did or not.

X Q. 19. Please try it and see for yourself.

Same objection.

A. No, sir; it does not touch.

X Q. 20. What does the point when placed upon the seat rest upon?

Same objection.

A. On the bearing strip inside of the plow point all around; also an embossment around the bolt-hole.

X Q. 21. Does the edge of the plow point come down to the same level as those points which you have named so as to rest upon the standard?

Objected to as indefinite and misleading.

A. No, sir.

122 X Q. 22. That part, then, is cut away from the bolt-hole projection towards the rear end of the plow point, is it not?

Objected to as irrelevant and immaterial.

A. It's cut away, but seemingly all alike until you strike this bearing ridge which bears upon the standard, with the exception of this embossment around the bolt-hole.

X Q. 23. If the upper surface of the plow point was straight and not hollowed out and the under side remained as it is now would not the under edge be thinned off from the thickness beyond it, as it is now constructed?

A. It would be thinned off to an amount necessary to make it straight on the upper side.

X Q. 24. Does the under surface of the plow point of Robinson correspond with the seat on the standard upon which you put it?

Same objection.

A. I couldn't tell without making a templet.

X Q. 25. Can't you swear that it does not?

Same objection.

A. It does not.

X Q. 26. If at the meeting edge of the plow point and mold-board the plow point was made as thick as the projection at the edge could it be made to fit "Defendants' Exhibit Complainant's Plow?

Objected to as irrelevant, immaterial, and hypothetical.

A. No, sir; it could not, I think.

X Q. 27. In order to make that point fit the exhibit before you it was absolutely necessary to cut that edge down from the level of the projection at the bolt-hole on both sides, was it not?

Same objection

123 A. Well, that's a question that implies an alteration in the pattern. I don't think that I have anything to say about this except as to the present shape. In the first place, you make—gentlemen, here is a point of a peculiar shape; any pattern-maker can alter that to fit or not fit any plow.

X Q. 28. Question repeated.

Same objection.

A. Gentlemen, you can't catch me in that way. In the first place, you have added to the outside of the point; you, of course, have made that point thicker, and that point—if you added to that thickness there it makes the point thicker and consequently stick beyond the mold-board. All there is about it I want to get at the truth. Then if that point sticks out so far beyond the mold-board it must necessarily be cut away in order to get down even with the mold-board.

X Q. 29. In the condition named in the last question what would cause the edge of the plow point to project above the mold-board if the projection that now is there does not produce such an effect?

Same objection.

A. That rib.

X Q. 30. Then that cutting away of the surface of the plow point on either side of the projection is for the purpose of permitting the plow point to fit over the rib, is it not?

Same objection.

A. Gentlemen, I protest against all this. I say here that you have gone to work and altered this plow point, and I am here to deal with this point only.

Counsel for the complainant insists upon an answer to the last question.

124 A. The counsel please insert in his question the plow point as altered by the counsel asking the question.

I am talking about the point now as altered. I am not talking

about the point in the exhibit. You have altered the point by filing up the outside and making it straight.

Counsel for complainant states that he has not altered the plow point in any particular to which the witness has testified, but simply now asks him if the casting does not show that in making the pattern therefor material was removed to make the edge of the point thinner than the projection spoken of in the question.

Witness states: I cannot swear that this seeming removal was for that purpose. I want to say something why I testify in that way.

This seeming removal or taking away of stock, in my mind, might have been made for the purpose of reducing the weight of the point.

I don't say it is as the casting is conveyed to my mind.

X Q. 31. I wish to know whether the removing of that material was not for the purpose of making it thinner.

A. I should judge it was.

X Q. 32. Unless that edge was made thinner the plow point would not fit into the standard in place on account of the rib projecting at that point, would it?

A. No; it would not.

X Q. 33. On the standard of the exhibit about which you have testified there is a short space left in which there is no projecting rib?

A. There is no projection there for a little ways.

X Q. 34. That space permits the projection at the edge of the point opposite the bolt-hole to fit down onto the standard?

125 A. Yes, sir; but it did not touch the surface of standard.

X Q. 35. If the projection you have spoken of did not bear upon the face of the standard what would be there to support the edge of point when under the severe strain and pressure of the act of plowing?

A. This bearing rib on the inside of the point and the embossment around the bolt-hole.

X Q. 36. In your judgment as a mechanical engineer would that be sufficient to sustain the edge of the plow point next the mold-board against severe pressure without springing the edge below the surface of the mold-board?

A. Owing to its peculiar shape it would be.

X Q. 37. Will you examine the point placed upon the plow now under consideration and by pressing upon the point at its edge at the wing see whether or not it does not touch on the rib beneath?

A. No, sir; I don't think it does. Gentlemen, I fail to see any mark which shows that it touches the rib. No, sir; there is not a particle. Now, to make doubly sure I will see what it does. I have pasted a piece of card-board on the plow point marked G which comes over the rib on the standard and find that does not touch the pasteboard.

Redirect examination by Mr. SELDEN:

R. D. Q. 38. Please caliper Defendants' Exhibit G at the meeting edge and near the bearing rib and state the difference in thickness.

A. There is one-sixteenth inch difference.

R. D. Q. 39. That is, as I understand you, the point in question is a sixteenth of an inch thicker at the bearing rib than at the meeting edge?

A. Yes, sir; that is the average difference.

126 R. D. Q. 40. Has this point been ground on the outer surface?

A. No; nothing more than the sand ground off.

Recross-examination by Mr. GREENOUGH:

R. X Q. 41. What is the difference in the thickness of that point along its line of bearing when placed upon the standard and the thickness of the edge along the line of the mold-board?

A. One-quarter of an inch. In other words, the bearing rib is a quarther of an inch thick. The bearing projects a quarter of an inch.

WILLIAM J. MACK.

STATE OF NEW YORK, } ss:
County of Monroe, }

On this the 15th day of February, A. D. 1888, before me personally appeared William J. Mack, who subscribed the above deposition, and made oath the same is the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

Adjourned, by consent, to February 16th, 1888, 9.30 a. m., at same place.

9.30 A. M., *February 16th*, 1888.

Parties appeared as before.

JOHN T. MOXLEY, witness called on behalf of the defendants, being duly sworn, testified as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is John T. Moxley; my age, 53 years; my residence, Norfolk, Va.; my occupation is moulder and pattern-maker.

127 Q. 2. Were you at any time in the employ of Charles T. Palmer, of Richmond, Va.; and, if so, from what time to what time?

A. From 1870 to 1886.

Q. 3. What was Mr. Palmer's business during this time?

A. Manufacturing agricultural implements.

Q. 4. Do you know Lewis B. White, of Norfolk, Va.; and, if so, how long have you known him?

A. I have known him from 1873 up to this time.

Q. 5. State whether or not Mr. Palmer made plow castings for Mr. White or under Mr. White's direction.

A. He made them by his directions.

Q. 6. For whom?

A. For Mr. White, of course.

Q. 7. What was the name of the firm with which Mr. White was connected?

A. S. March & Co.

Q. 8. Please examine Defendants' Exhibit White Plow and state whether or not Mr. Palmer at any time made plow castings similar to the exhibit for S. March & Co.; and, if so, state when such manufacturing commenced, how long it continued, and its extent.

A. Charles T. Palmer commenced to make castings for Mr. White in 1874; not exactly like this; we get at that afterwards. I suppose he made castings for him from 1874 to about 1884, as near as I can recollect; of course I can't recollect it exactly. I suppose we made from 3 to 5 thousand of them standards—that is, a year, each year. It is hard to get at how many mold-boards and points were made. Well, about 3 or 4 months in the spring from January up we made from 450 to 480 a day, and mold-boards about 300 a day.

128 Q. 9. State when you commenced to manufacture points and mold-boards provided with recesses on their meeting edges and standards with ribs adapted to fit the recesses.

A. We commenced them in January, 1875.

Q. 10. By whom were the patents made for the recessed points and mold-boards and the ribbed standard?

A. They were made by Mr. White.

Q. 11. How many point patterns did you have to fit the ribbed standards?

A. We had about 20.

Q. 12. How many mold-board patterns to fit this ribbed standard?

A. We had about 11 mold-boards to fit that standard.

Q. 13. State whether or not these point patterns were all recessed to fit the rib on the standard like Defendants' Exhibits B & E.

A. Yes, sir; they were.

Q. 14. Was the foundry where these castings were made under your charge?

A. Yes, sir; it was.

Q. 15. Did you at any time receive instructions from Mr. Palmer as to certain changes in these patterns that Mr. White wanted made?

A. I did.

Q. 16. What was the character of these changes?

A. At one time he instructed me to cut out the mold-board to make a little closer fit—he wanted that to fit down on—which I did according to his directions. I mean by "that" on this rib of the standard.

129 Q. 17. How long was it after you commenced to make these recessed mold-boards and points and ribbed standards that you made these changes?

A. I always made the changes, whatever changes he wished to make. I was there for that purpose, you know.

Q. 18. Did you change the size of the recesses and ribs more than once?

A. I don't think I did.

Q. 19. How long was it after you commenced making recessed

points and mold-boards and ribbed standards that you changed the size of the recesses and ribs?

A. I suppose it was about 3 years, as far as I can recollect.

Q. 20. Where is Mr. Palmer now?

—. I think he is on a farm near Lynchburg, Va. I couldn't tell the county exactly.

Cross-examination by Mr. GREENOUGH:

X Q. 21. In correcting the patterns by direction of Mr. White were you instructed to make the rib and recesses fit more perfectly than they were in the original patterns?

A. Them was the original patterns. I was instructed to fit them more perfectly; sometimes castings differ very much in casting them; sometimes we think it is in the pattern and sometimes it is in the moulding.

X Q. 22. Did you enlarge the rib or decrease the size of the recess in making the alteration of which you speak?

A. I changed the recess whatever it should be to make it fit. The rib was never touched. The change of the recess was very little. We never had much of it to do.

X Q. 23. The object in changing the recesses was to make them fit the sides and ends of the rib?

130 A. Yes; as near as I could, and bear upon the top also. We wanted them to fit down snug.

X Q. 24. This was for the purpose of preventing all play or movement in any direction of the point and mold-board upon the rib?

A. Yes, sir; that was my intention.

X Q. 25. You understood that to be Mr. White's purpose in his instructions to you, did you not?

A. Yes, sir; that was my instruction from him.

X Q. 26. What did you understand from Mr. White was the purpose in using that short rib upon the standard with the recesses on the mold-board and point fitting it?

A. He put that on there to keep the point in its proper place.

X Q. 27. You understood this rib and the recesses to be for the purpose of steadying the point and mold-board when bolted to the standard?

Objected to as irrelevant and immaterial.

A. Yes, sir; that is correct; put there to steady it.

J. T. MOXLEY.

STATE OF NEW YORK, } ss:
County of Monroe, }

On this the 16th day of February, A. D. 1888, before me personally appeared John T. Moxley, who subscribed the above deposition and made oath that the same is the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

131 TRUMAN V. FOX, a witness called on behalf of the defendants, being duly sworn, testified as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is Truman V. Fox; my age, 35 years; my residence, Clifton Springs, and my occupation is implement dealer, wagons and carriages.

Q. 2. Do you deal in plows made by the Syracuse Chilled Plow Co.; and, if so, how long have you dealt in said plows?

A. I do and should think—I couldn't tell just how long—5 to 8 years—7 or 8 years.

Q. 3. Have you recently sold one of the Syracuse Chilled Plow Co.'s plows to E. C. Robinson, of Canandaigua?

A. I sold one a short time ago to Mr. Robinson's son here.

Q. 4. When was this?

A. A short time ago.

Q. 5. Please examine the plow now shown you and state whether or not that is the plow you sold Mr. Robinson.

A. It resembles it very closely.

Q. 6. State whether or not it is of the same size, shape, and marked in the same way as the plow you sold Robinson.

A. It is.

Q. 7. Have you at any time sold plows made by the Syracuse Plow Co. with corrugated points?

It is hereby stipulated by and between the parties herein that the defendants' answer may be amended by adding to the list of prior patents therein U. S. letters patent No. 220,373, date Oct. 7th, 1879, issued to Levi W. Hall, of Syracuse, N. Y., for improvements in plow points.

132 It is also stipulated that defendants' answer be amended as follows:

These defendants, further answering, say on information and belief that prior to the supposed invention of the said Judd The Syracuse Chilled Plow Co., the complainant herein, made and sold plows containing or embodying the invention described and claimed in the said Judd patent under and in accordance with the patent of Hall, No. 220,373, dated October 7th, 1879.

It is further stipulated that the replication may stand as a pleading in the case.

Objected to as immaterial and incompetent.

A. I have.

Q. 8. When did you first sell such plows?

A. I should think in 1880, but I won't be certain.

Cross-examination by Mr. WRIGHT:

X Q. 9. Has either Mr. John Robinson or Edward Robinson or their agents offered to sell you any points made by them to fit the Syracuse plow?

Objected to as irrelevant and immaterial and not cross-examination.

A. Mr. J. S. Robinson offered to sell me points to fit the Syracuse plow. I don't know who made them.

X Q. 10. (Defendants' Exhibit G shown witness.) Was this the kind of point offered you?

Same objection.

A. I couldn't tell you.

X Q. 11. Did they offer to sell you points to fit plows the same as "Defendants' Exhibit Complainant's Plow"?

Same objection.

A. Their offer was to sell me points to fit the Syracuse plow.

133 X Q. 12. All kinds?

Same objection.

A. I don't think they offered me the corrugated points.

X Q. 13. Did they offer you all other kinds of points except the corrugated points?

Same objection.

A. The only points they offered me, as I said before, was points to fit the Syracuse plows.

X Q. 14. Did they have a conversation with you at the time about the patents?

Same objection.

A. I don't think Mr. Robinson and I ever had a conversation about the patents.

X Q. 15. Did you and Edward Robinson?

Same objection.

A. It seems to me that young Mr. Robinson has said to me some time ago that there was a claim on a patent or patent claimed, I believe, on a point, or the way of making of it, or something like that.

X Q. 16. Did he say anything to you about how he attempted to avoid the Syracuse patent?

Same objection.

A. I don't think he did.

X Q. 17. How did he come to speak of the Syracuse patent?

Same objection.

A. Well, I don't know whether he spoke of it first or I. I think I spoke of it first.

X Q. 18. What claim did he make in answer to what you said of the Syracuse patent?

Same objection.

134 A. I think he said it was no patent or no claim for a patent.

X Q. 19. Did he present you with any circulars or any prospectuses of any kind advertising Robinson & Son's points?

Same objection.

A. Not lately he hasn't. He might have given me a circular some years ago. I don't think he has lately.

X Q. 20. Are you willing to swear that you sold any of these corrugated points mentioned in the Hall patent or similar to the Hall patent, or that you received any from the Syracuse Plow Co. prior to January 1st, 1881?

A. I can't swear positive now.

Redirect examination by Mr. SELDEN:

R. D. Q. 21. Do you know George Whitbeck?

A. Yes.

R. D. Q. 21½. Was he at any time travelling salesman of the Syracuse Chilled Plow Co.?

A. He claimed to be.

R. D. Q. 22. Did you buy plows of him at any time?

A. Yes, sir.

R. D. Q. 23. Now, did you not buy of Mr. Whitbeck plows with corrugated points in the summer or fall of 1879?

A. As I said before, I couldn't swear positive that I bought those points as far back as that.

R. D. Q. 24. Did you ever receive a circular issued by the Syracuse Chilled Plow Co., advertising for sale plow points to fit the Canandaigua plow, old pattern?

Objected to as incompetent—circular the best evidence—and immaterial.

A. It seem as though I have. I would not say positive.

135 R. D. Q. 25. If you had bought any points of Robinson & Son to fit the Syracuse Co.'s plows, to whom would you have sold them?

Same objection and calling for conclusion and presupposes matter not proven.

A. I would have sold them to my customers.

R. D. — 26. You would have sold such points to farmers who had already the Syracuse plows?

A. Certainly.

Recross-examination by Mr. WRIGHT:

R. X Q. 27. You would have sold those points to anybody who called for them, would you not, for cash?

A. I sold them for cash or barter if they were good for it.

TRUMAN V. FOX.

STATE OF NEW YORK, } ss:
County of Monroe, }

On this the 16th day of February, A. D. 1888, before me personally appeared Truman V. Fox, who subscribed the above deposition and made oath that the same is the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

136 Recess to 2 p. m.

2 P. M.

Parties appeared as before.

GEORGE WHITBECK, a witness called by the defendants, being duly sworn, testified as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is George Whitbeck; my age is 48 years; my residence is Rochester, N. Y., and my occupation with the Rochester Plow Co.; am secretary and manager.

Q. 2. Were you at any time agent for The Syracuse Chilled Plow Co., the complainant in this case?

A. Yes, sir.

Q. 3. When was this?

A. I commenced with them in Aug., 1877, I think, and my time expired in December, 1880.

Q. 4. While you were such agent for the complainant did you sell any plows provided with corrugated points?

Objected to on the ground the question is too general and is incompetent.

A. I did, sir.

Q. 5. Were such plows made under the Hall patent?

A. Yes, sir; so it was said.

Complainant's solicitor moves that the latter part of the answer be stri-ken out on the ground of being hearsay.

I got it from Mr. Hall himself. We frequently talked the matter over in regard to that.

The same motion as to this part of the answer, on the further ground that no proof appears that Hall had anything to do with the complainant, and as hearsay.

Q. 6. Was Mr. Hall in any way connected with the Syracuse Plow Co.?

137 Objected to that the witness does not know anything about this question; that the plaintiff is a corporation, and any question of this kind must be decided by the records of the corporation; hearsay and incompetent.

A. He was.

Q. 7. In what way?

Objected to on the same ground as last above.

A. He was president of the company.

Q. 8. When did the Syracuse Chilled Plow Co. first place on the market plows with corrugated points?

Objected to that a sample of the specific point is not in evidence and the question as to whether the company sold corrugated points is immaterial and incompetent; that the question is too general and is incompetent, and the witness can only state facts within his own knowledge as to when he sold corrugated points.

A. The very last of 1879 or first of 1880. I couldn't swear that anything was sold in 1879. I think I took orders the first of 1880 and not in 1879, though I think orders were taken for the steel-beamed plow with corrugated points in the latter part of 1879. The steel-beamed plow was sold with a corrugated point.

Defendants' solicitor calls witness's attention to a plow.

Q. 9. State whether or not said plow having a corrugated point is like those sold by the complainant, as stated in your answer.

A. Yes, sir; it is essentially the same. I can't see any difference.

The plow is offered in evidence and the same received and marked "Defendants' Exhibit Complainant's Corrugated-Point Plow."

Q. 10. State whether or not while you were agent for the Syracuse Company the said company sold any points which fitted any of the Canandaigua plows.

138 A. I believe they did.

Q. 11. And the defendants' plows were known at this time in the trade as the Canandaigua plows?

Objected to as leading.

A. Robinson's Canandaigua plows.

GEORGE WHITBECK.

STATE OF NEW YORK, } ss:
County of Monroe, }

On this the 16th day of February, A. D. 1888, before me personally appeared George Whitbeck, who subscribed the above deposition and made oath that the same is the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

Adjourned, by consent, to 9.30 a. m. February 17th, 1888, same place.

9.30 A. M., *February 17th*, 1888.

Parties appeared as before.

RUFUS F. OSGOOD, called as a witness on behalf of the defendants, being duly sworn, testified as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is Rufus F. Osgood; my age is 56 years; my residence is Clarkson, N. Y., and my occupation is patent solicitor.

Q. 2. What experience have you had as an expert witness in patent cases?

A. I have followed the profession of soliciting patents for 30 years. During that time I have become acquainted with almost all classes of inventions; have been frequently consulted in regard to mechanical devices; have appeared as expert in patent causes in a good many cases during the last 20 years.

139 Q. 3. Have you examined letters patent No. 231,810, dated Aug. 31st, 1880, issued to James L. Judd for improvements in plows, and do you understand the inventions therein described and claimed?

A. I have examined the patent and I think I understand the inventions described therein.

Q. 4. Have you also read and examined certified copy of the file-wrapper and contents in the matter of the application of said letters patent to James L. Judd, marked "Defendants' Exhibit Judd File-Wrapper and Contents," and do you understand the same?

A. I have examined and think I understand it.

Q. 5. Have you examined the various patents offered in evidence by the defendants in this case; and, if so, do you understand the inventions in said patents?

A. I have examined them and understand them.

Q. 6. Have you also read certified copy of the file-wrapper and contents in the matter of letters patent granted to Lewis B. White June 29th, 1875, No. 164,952, marked "Defendants' Exhibit White File-Wrapper and Contents;" and, if so, do you understand the same?

A. I have and I understand it.

Q. 7. Have you also examined the plows and various parts of plows offered in evidence by the defendants; and, if so, do you understand the same?

A. I have examined them and understand them.

Q. 8. Please compare the invention described and claimed in the second claim of the Judd patent with the inventions set forth in the said prior patents offered by the defendants. State wherein they resemble or differ from each other, and state also whether or not you find the invention of the said second claim of said Judd patent set forth in any of said prior patents, giving your reasons for any opinions you may express.

A. The second claim of the Judd patent is as follows:

140 "The combination of the ribs '*a*' and chamfered edges '*b*' in plow castings, substantially as and for the purposes specified." On referring to the specification I find that a rib is cast or formed on the foot of the standard that holds the mold-board and point, said rib following the contour or outline of the joint between the lower edge of the mold-board and the upper edge of the point.

I also find on the landside of the plow a similar rib and on the upper edge of the plate which fits the landside a similar groove,

said groove being a device called in the patent the chamfered edge. The devices as described in the specification are for the object of facilitating the grinding of the meeting edges of the several parts; also so that they can be fitted with little labor while the thin edges when in place are firmly sustained by the ribs, which also aids to keep the parts in place when screwed together. I understand by this that the object is not simply to thin the edge of the casting to facilitate the grinding, but also to enable them to be fitted together so that the rib will sustain the edge which fits it and form a shoulder or stop to the same when the parts are screwed together. In my opinion this second claim is limited to such ribs or beads and such thinned edges where the parts are fitted together in such a manner that the thinned edge comes in contact with the rib and joins the same and the edge is supported and held in place by the rib acting as a stop or shoulder. In White's file-wrapper and contents, "Def'ts' Exhibit White File-Wrapper and Contents," I find a very similar construction so far as the rib on the foot of the standard and the thinned edges on the mold-board and point are concerned.

I find in that patent a rib marked "*m*" on the foot of the standard, the same extending transversely or crosswise on the foot. I also find upon the lower edge of the mold-board and upon the upper edge of the point thinned edges, which rest upon and are supported by the rib and are fitted in a similar way to that
111 shown in the Judd patent. The only difference I perceive is that in the White patent the rib and the thinned edges are square in cross-section, while in the Judd patent they are circular in cross-section. This I regard as simply an immaterial difference, one answering the same purpose as the other, facilitating the grinding of the edges in the same manner, the rib also forming a support and a stay to the edges of the mold-board and point. I read the devices in these two cases as being equivalents, and, in my opinion, there is no difference in effect, one serving the same purpose as the other.

In White's patent the joint meets over the center of the rib in the same manner it does in Judd's patent and apparently is made close-fitting in the same way and for the same purpose. I find in quite a number of these patents cited that the point and mold-board, either or both, have thinned edges which would facilitate grinding in the same manner and in some of them to a greater degree than in the Judd patent. I find in some of these patents that these thinned edges rest against a shoulder of the foot of the standard.

This is the case in the patent of Dennis, "Def'ts' Exhibit Dennis Reissue." In that case the point E is thinned at its upper edge by being chamfered or bevelled off and this thinned upper edge rests up against a shoulder of the mold board B. The lower end of the mold-board is also thinned. This upper sharp edge of the point could be ground off to make a joint with the same facility as in the Judd, and the shoulder against which it rests would form a stop in the same to hold the point in place as in Judd's patent.

This shoulder is in the mold-board instead of being upon the foot of the standard as in Judd's patent, but I see no novelty in apply-

ing it to the standard instead of the mold-board. The shoul-
142 der simply forms a stop in both cases and the meeting edges are thinned off in both cases to facilitate grinding. In Brinley's patent (this part of the evidence objected to as not within the pleadings).

Complainant's solicitor moves that the Brinley and the Utley patents be stricken from the record as not within the pleadings and states that he is taken by surprise to find that these exhibits were offered on the first day, and this present time is the first intimation that complainant's counsel has had that these exhibits are in evidence.

Defendants' solicitor states that the record shows for itself and that the patents were offered in evidence without objection.

I find in "Defendants' Exhibit Hall Patent" a construction similar to that shown and claimed in the Judd patent, so far as the thinned edge of the point is concerned, the same being thinned and fitting the rib cast upon the foot of the standard; there would be the same facility in grinding this thinned edge that there would in that of the Judd patent. As I understand this Hall patent, the upper edge of the point which is the thinned edge fits against the upper rib of the foot of the standard and forms a joint therewith in a similar manner to that shown in the Judd patent.

In "Defendants' Exhibit Themar Patent" I also find a point marked D, the upper edge of which is thinned and fits a corresponding shoulder on the standard and makes a joint therewith, being similar to the Judd patent, the only difference being, as I see, in the extent of lateral-bearing surface, the standard in the Themar case being thin or narrow and that in the Judd case being wider.

I also find in "Defendants' Exhibit Chenoweth Patent," "Chandler Patent, and Benton Patent, Utley Patent, and Brinley Patent," points with thinned edges which offer the same facilities in grinding as in the Judd patent.

Q. 9. Please examine "Defendants' Exhibit Complainant's
143 Corrugated-Point Plow" and state whether or not the said exhibit embodies the invention described and claimed in the second claim of the Judd patent, giving your reasons for any opinions you may express.

A. I think it does embody the inventions claimed in the second claim of the Judd patent. In this exhibit the foot of the standard is corrugated, forming ribs. I find that the lower edge of the mold-board comes down to the upper corrugation, the said edge being thinned or chamfered off, and I also find that the upper edge of the point comes up to this upper corrugation or rib and is thinned off, fitting thereto and making a joint with the lower edge of the mold-board. That construction is the same as in the Judd patent, where the mold-board and the point fit the rib and answers the same purpose, so far as I can see, offering the same facilities for grinding and making a joint with the rib in the same manner. In my opinion that construction in "Defendants' Exhibit Complainant's Corrugated-Point Plow" anticipates the second claim in the Judd patent.

Q. 10. Please compare "Defendants' Exhibit White Plow" and the several parts belonging thereto, marked A, B, C, D, and E, with the invention described and claimed in the second claim of the Judd patent and state whether or not the said exhibits embody or contain the invention described and claimed in said second claim of the Judd patent.

A. I find that the parts A, B, and C constitute one set, A consisting of the standard and its foot, C the mold-board, and B the point. The foot of this standard A has a rib cast upon its face transversely, extending partially across it, and the mold-board C has a corresponding thinned edge which fits the rib and projects part way over the same. The point also has a thinned edge which fits the lower side of the rib and projects partially over the same, making a joint with the mold-board. This construction is similar to that
144 shown and described in "Defendants' Exhibit White Patent," the rib on Exhibit A being similar to the rib marked "*m*" in said patent, and the thinned edges on the mold-board C and point B being similar to those marked "*m*" in said patent. I think this construction is substantially the same as that claimed in the second claim of the Judd patent, and in my opinion it anticipates that claim. It offers the same facilities for grinding and the rib supports the thinned edges of the mold-board and point in a similar way. I make the same statement regarding the Exhibits A, D, and E, constituting the second set of the White plow. The mold-board and point fit in the same manner on the rib of the standard and the construction is the same, and I think the second claim of the Judd patent is anticipated by that construction.

Recess to 2 p. m.

2 P. M.

Parties appeared as before and witness continued:

Q. 11. Have you read the testimony of complainant's witnesses, Wiard and Wilhelm; and, if so, do you understand the same?

A. I have and understand the same.

Q. 12. Please state whether or not you agree with Mr. Wilhelm in the reasons he gives for his opinions on the validity of the Judd patent; and, if not, give your reasons for any opinions you may express.

Objected to as calling for a conclusion, as incompetent; the witness must state the facts and cannot state why he believes the evidence of another witness is not founded on correct principles.

A. I do not agree with the opinions he has expressed except in relation to those general advantages which result from a construction of this kind and which are embodied also in the patent of White and in the patent of Hall, where the edges of the casting are thin to facilitate grinding and to enable them to fit a rib or shoulder
145 formed on the supporting part to keep such parts in place, and these features, in view of White and Hall, I do not consider as amounting to an invention; therefore I think there is

nothing in the Judd patent which amounts to an invention. I disagree with Mr. Wilhelm in regard to the scope of the second claim in the Judd patent. He says "it embodies as its elements the rib which is formed on the supporting part of standard along the line or junction of the superimposed plates and these plates which have their edges chamfered off or thinned so as to rest on the rib and be supported thereby."

He indicated the rib and chamfered edge in the singular, while in fact in the second claim of the Judd patent it is in the plural and not in the singular. Judd claims the combination of the ribs "*a*" and chamfered edges "*b*" in plow castings substantially as and for the purposes specified. This is not a claim to a rib and an edge, as recited by Mr. Wilhelm, but to ribs and edges, indicating that there are more than one of each. On referring to Judd's patent I find that he recites a rib on the front of the standard for fitting the mold-board and point and a rib on the landside for the fitting of the landside plate. I understand this second claim, being the plural form before referred to, to embody both ribs on the foot of the standard and the landside and the corresponding chamfered edges of the castings which fit thereto, and not a single one, as indicated by Mr. Wilhelm.

In fact, I look upon the second claim as a combination of those parts on the standard and the landside and to be limited in such a manner that if one part is thrown out the combination would be broken. I am confirmed in this opinion by referring to the file-wrapper and contents of the Judd patent, in which three claims were originally made, the first claim corresponding substant-ally with the first claim as it now stands in the patent, the
146 second claim being made to the chamfered edges of the plow point, mold-board, and landside, and the third claim corresponding substantially to the second claim as it now stands in the patent. In the first and second original claims the attempt was apparently made to cover the individual features, one consisting of a rib and the other of the thinned or chamfered edge and the third to the combination of the ribs and the chamfered edges in the plural, and which I understand are the ribs on the foot of the standard and the landside, as before described. I do not understand that the term ribs and the term "edges" means simply one rib and one edge.

Mr. Wilhelm also states "that the purpose of the Judd invention is fully accomplished if the chamfered edge rests on the top or crown of the supporting rib;" in other words, I suppose he means that the purpose -s accomplished by simply resting the edge upon the top of the rib simply as a support and not as a shoulder or stop, being the same in that respect as if it rested simply on the flat surface of the foot of the standard, which it would do if the plate were thick and no rib were there. I do not understand this to be the function of the rib. Judd recites in the specification that it serves to strengthen and give stability to the union of the parts, and that the thin edges are firmly sustained by the rib aforesaid, which also aids to keep the parts steadily in place when screwed to-

gether. I understand this to mean something more than merely resting one part upon another as a support, which would be the same thing as resting it upon a flat surface, and that by keeping the parts steadily in place it means that it has a holding power in addition to the simple support.

I disagree with Mr. Wilhelm in his opinion that none of the patents, viz., White, Chandler, Chenoweth, Benton, Themar, and Brand, and Dennis reissue, embodies the invention of the Judd patent, particularly the invention set forth in the second
147 claim. He has given no reasons for his opinion, but I have set forth my reasons in the preceding testimony.

Q. 13. Please state whether or not you agree or differ with Mr. Wiard's testimony given in this case, giving your reasons for any opinions you may express.

A. I disagree with Mr. Wiard in his opinion as to what the Judd patent covers. He says it consists of reducing the thickness of meeting joints of plow castings to facilitate fitting and in supporting the joints thereof with a rib. I don't understand that to be the subject-matter which the patent covers. That is shown in prior patents, and the claims are not laid to those features. I also disagree with him in his estimate of the White patent. He says he has examined it, but does not find any of the features patented by Judd. I find the elements patented by Judd in the White patent, which I have testified to before. It has the rib and the thin edges of the connecting plates adapted to be fitted to the rib. The difference in form is only a matter of degree and not of substance.

Q. 14. Please examine the White file-wrapper and contents and state whether or not you find in said exhibit in the specification as originally filed a rejected claim for the alleged invention covered by the second claim of the Judd patent.

Objected to on the ground that the file is in evidence and is the best evidence of what it contains, and the question asked calls for a conclusion.

A. In the fourth claim of the original specification the rib and the thinned edges are claimed. It is as follows: "4. The rib '*m*' and the wing of the frame in combination with the recesses '*n*' in the share and mold-board, substantially as and for the purposes herein set forth." I find that this claim was cancelled by amendment and another claim was substituted in its place as follows, viz:
148 "2nd. The rib '*m*' on the frame in combination with the share and mold-board, each being provided with recesses '*n*,' all constructed as and for the purposes set forth." In a subsequent amendment this last-named claim was finally cancelled.

Cross-examination by Mr. GREENOUGH:

X Q. 15. What do you find Mr. White describes as the purpose of his invention?

A. As stated at the commencement of his specification, he says: "The nature of my invention consists in certain improvements

upon the plow for which letters patent No. 140,749 were granted to me July 8th, 1883, as will be hereinafter set forth."

X Q. 16. What does he state to be the purpose of the device he describes and letters in his drawings "*m*" and "*n*"?

A. He describes the part "*m*" as a rib and the device "*n*" as recesses. He also says this rib acts as a guide in putting on the share and mold-board and in drilling or reaming the bolt-hole therein. It also acts as a stop for the share and mold-board so as to relieve the bolts which fasten the same from undue strain and to prevent the twisting of either share or mold-board. This is stated in the specification to be of great importance from the fact that both the share and mold-board are fastened only by a single bolt.

X Q. 17. Please explain what the patentee means by recess "*n*" in his specification and drawing, as you understand it.

A. I suppose he means what is shown in the drawing being a depression on the under side and at the edge which fits over the rib "*m*" and leaves a thickness outside.

X Q. 18. Is not that recess a short depression less than ⅓ of the length of the whole edge of the part next to the joint?

149 A. I should think it was about one-third of the length.

X Q. 19. If the patentee of White's patent should say to you that he made that depression on each edge of the plates as there described to fit perfectly the sides and ends of that rib and that arrangement was precisely similar to using a projection on the standard inside the line of junction to fit a depression in the mold-board and another to fit a depression in the point that it would be precisely the same in its purposes and have the effect intended in the use of one rib or projection in place of the two, would not that clearly show to you that the invention was simply for the purpose of holding the plates from twisting without any regard to their line of junction?

A. I simply answer that by saying that I didn't understand that question.

X Q. 20. If the inventor should tell you that by placing a projection upon the standard under the mold-board and another projection on the standard under the point at some small distance on one side of the line of junction of the mold-board and point and a depression was made in the mold-board and in the point on their under side to fit said projections that it would be an exact equivalent of his invention and design in placing the single rib on the line of junction, would you then understand that the device was for the same purpose of steadying the parts from lateral movement and in aid of the bolts in holding them together?

A. I should say such devices were not the equivalent of the rib which followed the line of junction, and the purpose of such devices probably would be simply to hold the parts in proper position.

X Q. 21. In a mechanical point of view what would be the difference except in the position of the parts?

A. The rib following the line of junction would make a
150 close fitting at that point and furnish an extended bearing,

whereas single points removed from the line of junction simply serve as isolated bearings and have less holding power; there would be more liability to displacement, loose action, and misfitting.

X Q. 22. In the question no size is named for the projections or depressions except that in each case they shall closely fit each other. Please assume that in both cases they are equal.

A. I don't think they would be so effective as to place the projection at the place of junction.

X Q. 23. In what way would the fitting up in case of the rib on the line of junction be easier than in the positions named in the previous question, provided the recess was made to fit the rib closely all around?

A. There would be a closer fitting upon a solid shoulder right at the junction and a more perfect flush surface than if the bearing were removed. I think it would be somewhat difficult to make a good joint with such bearings removed from such joint owing to the difficulty of making a good fit to those bearings.

X Q. 24. Is it not common to make bosses upon plow standards to fit recesses in the points?

A. Yes, sir.

X Q. 25. If the boss or rib or short rib, if you please, described in the patent of White was made so that the pattern of the recess shall fit it exactly on all sides, would it be possible to cut or grind or take anything from the adjacent edges of the parts on either side of the line of junction without leaving an open space?

Objected to as indefinite and as misrepresenting the White patent.

A. I state that I don't understand the question.

X Q. 26. Do you not understand what is meant by fitting the recess closely around the rib or boss?

151 A. I do.

X Q. 27. The two recesses are as described in the patent of White to cover the entire rib, are they not?

A. It is so shown in the drawing.

X Q. 28. Now, if those two recesses, when brought together, cover the entire rib and are fitted closely, would it be possible to take anything from the edges of the mold-board or point without leaving an open space between them?

A. Not if the fit were absolutely perfect.

X Q. 29. In that case it would be impracticable to take anything from the edges by any process?

A. If it was a condition that the edges at the joint should perfectly fit together and that all parts of the recess should perfectly fit the rib, of course it would be impracticable to take anything from the edge at the joint without leaving an opening.

X Q. 30. If you were shown a plate of metal ten inches long and ½ inch thick, having its edge cut perpendicular to its face, and in the edge of that plate there should be a recess cut two inches long

and one-quarter inch each way in its cross-section, would it not be proper to describe that plate as having a chamfered edge?

Objected to as irrelevant and immaterial.

A. Don't think it would be a proper designation.

X Q. 31. If two plates of that character were presented you, one of which was made as described in the above question and the other was grooved its whole length with a chamfer, cutting the perpendicular edge down to the thickness of a ¼ inch in thickness and cutting it back for some distance, would you say that those two plates were the equivalents of each other?

152 A. That would depend entirely upon the manner and arrangement for which they were used. If one would substantially serve the purpose of the other, I should say they were equivalents, being a mere difference in form of the recess; but I should call neither of these forms chamfered edges properly. I should call one a notched edge and the other a grooved edge.

X Q. 32. If the two plates thus constructed were to have their perpendicular faces removed by any of the well-known mechanical processes, which would be faced with the least labor and expense—the one with the recess or the one with the groove, as you term it?

Objected to as irrelevant and immaterial.

A. I should say the one with the groove would be easiest dressed or faced.

X Q. 33. If a point having the outline of a mold-board affixed to a plow, with the rib and chamfer, as described in the Judd patent, on the mold-board, were made with an edge having a recess such as has been described in the previous question, with the rest of the edge of the point of the full thickness, could it be made to fit upon the Judd plow?

A. It would be a matter of necessity, of course, that the rib and the recess should be adapted to each other and made to fit each other, which would be a simple matter of mechanical skill; but, of course, if the rib were longer or larger than the recess, then they would not fit.

X Q. 34. Would a groove in the edge of a plate hav- no end bearing against the end of a short rib placed therein have the power of preventing the point from moving laterally upon said rib?

A. No, sir; not in itself.

X Q. 35. It would have no tendency, then, to prevent a lateral movement of the point upon a single bolt with which it was attached?

153 A. Oh, yes, it would, owing to the cramping action produced by the turning of the plate on the bolt as a center.

X Q. 36. Would not that bring a greater strain upon the bolt than if the rib were placed in a recess with end bearings?

A. I think it would.

Adjourned to 7.30 p. m., same day and place.

7.30 P. M.

Parties appeared as before, and witness continued:

X Q. 37. Will you inform us what you consider the purpose of the Judd patent as set forth in his specification?

A. It seems to be to lessen the labor of grinding the meeting edges of the several parts of the joints, and at the same time to give strength and stability to the union of the parts.

X Q. 38. The inventor states that the purpose of his invention is to remedy the difficulty found in grinding the meeting edges of the several parts of the joints, does he not?

A. Well, I think not exactly in that language. It is substantially the language that I have stated in the preceding answer.

X Q. 39. Without following the language of the patent, which you have not done in the preceding answer, is not the language in the question what is meant by the language in the specification?

A. No; I think not. It recites at the commencement that considerable labor is required to grind the meeting edges of the several parts at the joints, and especially when they consist of chilled or very hard metal castings. He then says, "I remedy this difficulty in the following way," etc. The "difficulty" seems to be the labor of grinding the parts.

154 X Q. 40. The patentee also states that the "edges of the points (seen at Fig. 1) and other parts, the under or inside, is chamfered off at the meeting edge '*b*,'" does it not?

A. Yes, sir.

X Q. 41. The description further says that "the edge at the point is made thin, so as to be readily and expeditiously ground with a minimum amount of labor, while the thin edges, when in place, are firmly sustained by the rib '*a*,' which are aids to keep the parts steadily in place when screwed together," does it not?

A. Yes, sir.

X Q. 42. By that description, what parts do you understand were kept in place when you screwed them together?

A. I suppose it refers to the point, the mold-board, and the plate on the landside when screwed to the body of the plow.

X Q. 43. The description recites that the thin edges, when in place, are firmly sustained by the rib "*a*," does it not?

A. Yes, sir.

X Q. 44. Does the specification state that the rib "*a*" sustains any other part of the point than the thin edges?

A. Not in that language. It follows as a consequence that it sustains the part of which the thin edge forms a portion.

X Q. 45. Does it state any other portion that is sustained by the rib?

A. I have stated in my previous answer that it did not.

X Q. 46. If the two thin edges of the point and mold-board
155 are brought together, resting upon the rib "*a*," and screwed fast, would not the rib "*a*" aid to keep the thin edges steadily in place?

A. I don't see how it would do it except by forming a support

underneath to prevent sagging or depression of the thin edges under extreme force on the outside. If the mold-board and point were screwed fast to the plow and held immovably I don't know how the rib would assist in holding them in place otherwise than as above described. In such case, if the under side of the plate close to the rib had a firm bearing upon the bottom of the support, I don't see as the rib would be of any advantage in holding it in place. As a matter of fact, however, there is usually a degree of looseness at the points of attachments of the screws or bolts which allows a degree of movement, especially when they become rusted or worn, and in that case I think the ribs would form a bearing to hold the parts steadily in place.

X Q. 47. In your direct examination you state that in the Dennis reissue patent the point "E" is thinned at its upper edge by being chamfered or beveled off and this thinned upper edge rests against the mold-board "B." The lower end of the mold-board is also thinned. In which figure do you find that represented?

A. In Fig. 1.

X Q. 48. In that figure does not the line indicating the joint between the point or share and mold-board run straight through on an angle inclined to their surface, indicating that they are joined together the full extent of their thickness?

A. The two edges which connect together are lapped. The upper portion of the point running up outside the lower end of the mold-board and these two lapped parts are connected with the bottom of the standard by a screw or bolt. The two lapped parts are of the same thickness as the mold-board above the lap; but the
156 upper edge of the point is cut with a true chamfer or a bevel, which makes a thin edge at the top, and this chamfered or bevelled edge rests against a shoulder or the mold-board.

X Q. 49. The chamfer or bevel there shown causes the face of the point to be of greater depth than if it runs through at right angles to the face of the mold-board and point, does it not?

A. The depth is the same in either case, but there is a longer line running over the bevel than there would be running over a square end.

X Q. 50. If that face of the point coming in contact with the mold-board were required to be ground or otherwise fitted to the mold-board, as shown in the drawing, there would be a considerable greater surface to remove than if the joint were perpendicular to the surface of the point?

A. There would be if you ground the whole surface, but if you ground only the extreme edge that would be very thin and not require much grinding.

X Q. 51. Would it be possible to fit two parallel surfaces together that required grinding to fit without grinding their entire surfaces?

A. I think so. In that case of Dennis the joint is square across, and I think the sharp edge might be ground off to make a fit of the upper surface without a close fit of the under surface. That would depend, however, upon having sufficient looseness in the angular joint to allow this grinding to be done.

X Q. 52. Please examine carefully the drawing Fig. 1 and state whether or not the line of junction between the upper edge of the point and the mold-board is not a single line showing that the face of the edge of the point and the face of the edge of the mold-board against which it rests are not in one and the same plane?

157 A. It is so shown, and probably that was the way it was intended to be used. My previous answer indicated that the upper edge might be fitted by grinding off, provided there was sufficient looseness in the joint below.

X Q. 53. By that do you mean sufficient difference in the parallelism between the two surfaces to admit of its correction by grinding off the upper part of the edge of the point?

A. I mean there might be sufficient difference between the angle at the joint, that of the point being more acute than that of the mold-board, so that a very slight grinding or dressing off of the extreme edge of the point might bring it up to place and make a close joint.

X Q. 54. Is there anything in the drawing or specification of Dennis' patent to warrant the assumption you have made in your last answer?

A. I have made no assumption of that kind in my answer; on the contrary, I have stated that it was probably the invention to grind or dress the whole surface of the joint, but that it was possible to do it, perhaps, in the manner I have described, by the dressing off the extreme upper edge. I have not assumed that it was intended to be done so; in fact, I find no reference in the specification how it is done. The drawing is made on a very small scale and the joint is simply shown by a single line.

X Q. 55. The facts being as you stated in your last answer, there is nothing in the patent of Dennis to warrant you in saying that the edge of the point may be ground away as in the case of Judd's patent to make a fitting joint?

A. I don't think it is the full equivalent to Judd's.

X Q. 56. Is there the slightest analogy between them?

158 A. I think there is a resemblance.

X Q. 57. Please state it.

A. The point has a chamfered edge. This chamfered edge rests against a shoulder or rib on the part which supports it. It is the same in Judd's.

X Q. 58. If the upper edge of that point which you call a thin edge resembling Judd's were ground away, instead of making the joint better it would ruin it, would it not, by separating the edge from its seat?

A. That would also be the case with Judd's.

(Objected to as wholly irresponsive.)

X Q. 59. Question repeated.

A. I think not. Of course that would depend upon the degree to which the edge was ground away. It could be ground away enough to make an open joint, which of course would be detrimental.

X Q. 59. The point being fitted to the mold-board on a line in-

clined to their surface and their edges being parallel, the point could not be fitted to the mold-board by grinding at its upper edge?

A. I think not.

Adjourned to 10 a. m., February 18th, 1888, at same place.

10 A. M., *February 18th*, 1888.

Parties appeared as before, and witness continued:

X Q. 60. Please examine the patent of Themar and say of what point "D" is composed of.

A. Formed of steel.

X Q. 63. Please look at Fig. 5 and say at what point that part is represented as thickest.

A. As shown in Fig. 5, which is a cross-section of the base
159 of the standard and a rear elevation of the point, the thickest portion shown in that figure is the top of the point at the rear, but that is not the thickest part of the point.

The latter part of the answer objected to as not responsive.

X Q. 64. What do you understand that point to be made of, plate steel or how otherwise?

Objected to as entirely irrelevant and immaterial.

A. I don't know whether it is plate steel or cast steel; the specification throws no light on that subject.

X Q. 65. This point "D" is affixed to the top "*n*" of a bar, "*a*," the front end of which is broad, to which the point "D" is bolted, said point "D" being curved upwards at the center on its rear line to fit the narrow part of the horizontal bar "*a*," is it not?

A. That's correct, I think.

X Q. 66. That upward curvature fitting over bar "*a*" is thicker than any other portion of the rear edge of the point "D," as represented in Fig. 5, is it not?

A. Yes, sir.

X Q. 67. In Fig. 4 the line of junction between this narrow bar "*a*" is fitted to a shoulder on said bar nearly vertical in its plane, is it not?

A. Not vertical to the plane on the support on which it rests; it is angular to that support.

X Q. 68. If that point were required to be fitted, by grinding, to that bar the whole thickness of the face of it at that point would require to be removed?

A. I think so.

X Q. 69. In that particular, so far as the fitting is concerned, this device is precisely like that of Dennis excepting that the angle is much less?

160 A. I think it is similar to Dennis', but the same reasons that I have given in considering Dennis' case would apply in this with less difficulty in fitting, because there is less extent of surface to fit.

X Q. 70. The whole face of the point "D" at that point is shown to rest against the shoulder "*z*" in Fig. 4, is it not?

A. It rests on the shoulder "z," as I understand it.

X Q. 71. Against what does the rear edge of the point "D" rest at that point?

A. It rests upon a shoulder, "z," and the rear edge against an additional shoulder back of "z." I understand that the shoulder which is marked "z" is the circular enlargement that rests under the upper edge of the point "D."

X Q. 72. Will you please inform us if in that fig. the rear of the point does not come in contact with the second shoulder of which you speak?

A. It does; a line indicates the junction.

X Q. 73. In the Chenoweth patent the line of junction of the point with the mold-board is shown in the drawing to be the thickest part of the point?

A. I think not.

X Q. 74. In the edge view of the point between the letters "*j j*" and indicated by the letter "*i*" above it, is the part not thicker than it is from the letter "*j*" to the end?

A. I don't know that that part represents the point, but in that fig. the extremities are thinner than the center portion, marked "*i*."

X Q. 75. In the Benton patent Fig. 2 shows a lapped joint between the parts, the edges of which are made to fit each other the whole face of their surface?

A. So shown.

161 X Q. 76. Such a construction as that is very common in plows, is it not?

A. Yes, sir.

X Q. 77. Please examine the Chandler patent No. 193,923 and describe how the point is formed and attached to the share.

A. There is a V-shaped slot or groove in the point which fits a corresponding bevelled edge of the share and the parts are secured together by means of lugs and a pin; the rear end of the part is recessed and the lower or horizontal portion of the share is stepped or recessed to allow the two to fit together, and also to provide an aperture for a bolt to unite the point to the share.

X Q. 78. The parts in contact in this structure are much greater than the thickness of either the point or the share, are they not?

A. What do you mean by the parts in contact?

X Q. 79. I mean the "parts in contact"—the slot or groove "*b*" in the point and the bevelled or tapered portion that fits in "*b*"?

A. The surface is greater than the thickness of the share, but not so great as the thickness of the point.

X Q. 80. Will you please explain why the surface of the groove in the point is not much greater than its thickness?

A. I suppose you refer to the outer bevelled edge of the part A which fits in the corresponding bevelled seat of the part B, and not to the whole flat back surface of the groove. On the part B, in which the groove is formed, is an enlargement or swell which is much thicker than the bevelled part of the groove or the bevelled edge which fits therein.

X Q. 81. With the explanation given, will you not state whether

or not the surface of this groove is not very much greater than the thickness of the point?

162 A. I ask you whether you mean the entire surface of the groove, including the bevel and the flat back surface, or whether you mean simply the bevelled surface?

X Q. 82. I mean just what the question indicates, no more and no less—the V-shaped slot or groove "*b*."

A. I cannot answer more definitely than I have done. If you mean the whole surface, I state that there is a greater extent than the thickness of the point. If you mean the bevelled surface alone, I state it is less.

X Q. 83. If those surfaces were required to be fitted together by grinding or otherwise, would there not be much greater surface for grinding or otherwise than if the two parts were put together by a joint perpendicular to the surface?

A. Yes; I think there would be more extent of grinding surface to go over, owing to the bevelled form of the edge.

X Q. 84. In a point formed as shown in the drawing would it, in your judgment, be practical to grind the face of the groove therein?

A. I think it would. It might be difficult, but I think it would be practical.

X Q. 85. In your examination of the patent of White and the Exhibits A, B, C, D, and E of his plow castings, do you perceive any difference between the devices shown in said patent and those castings?

A. I see no substantial difference between the castings and the corresponding parts of the patent. There are parts in the patent that are not shown in the castings.

X Q. 86. In the Hall patent when the corrugated point *it* placed upon its seat it has no lateral motion whatever if the corrugations fit, has it? I mean a motion at right angles with the corrugations.

163 A. If it is perfectly fitted, so that all the parts bear between the corrugations and is bolted fast in place, it would have no such motion; but I think it would be difficult to fit it so accurately by a common casting that it would have no motion.

X Q. 87. In a practical casting, with its usual imperfections, having a number of corrugations, such as shown in the drawing, when the parts are fastened together, would not that point be rigidly immovable on a line at right angles to the corrugations?

A. I think it would be substantially, but not absolutely.

X Q. 88. In the cross-section, Fig. 3, of the Hall patent, is not the edge that comes in contact with the mold-board a thick edge?

A. It is so shown in the drawings, but this is owing to the position in which the cross-section is made. The cross-section shown in Fig. 3 is made in the line indicated by "*x x*" in Fig. 1, which is angularly across the wing, cutting the corrugations in an oblique line, and not at right angles across the corrugations. In this cutting angularly across the wing it cuts across the outer corner of the point which has a hook edge or V that hooks over the front sharp edge of the standard. This hook or V of the wing is the thickened

part that is shown at the top in Fig. 3. If the line of section were made straight across the corrugations and at right angles thereto, so as to cut the upper edge of the wing inside of this hook edge that fits the front sharp edge of the standard, then it would show a thinned edge of the wing fitting upon the upper corrugations of the standard as a rib in a similar manner to that shown in the Judd patent. This corrugation comes at the line of junction between the lower edge of the mold-board and the upper edge of the point in the same manner as in the Judd patent and, in my opinion, serving the same purpose. This is an extended corrugation and an extended thinned edge of both the mold-board and the point.

164 This is clear from examining the specification, which says that the hole "*b*" is made through one of the projections or ribs "*a*" of the corrugated surface; also, that the hole "*d*" in the wing is opposite the one "*b*" in the standard between the projecting ribs of the corrugation. There is but one rib above the hole "*b*" which would bring the upper edge of the wing in the thinned form to fit it, being the second groove above the hole "*d*" in the wing. It is clear that the thickened edge shown at the top of Fig. 3 is owing to the peculiar line in which the section is made, that line being outside of and away from the corrugations and taking in the hook that laps over the front edge of the standard. Fig. 3 is an imperfect figure. It does not correspond in position or form with the line of section shown in Fig. 1. It is not made properly. If it were made in accordance with that line of section it would be of different shape from what it is.

By consent the cross-examination of Mr. Osgood was here suspended.

JOHN C. WHITING, a witness, called on behalf of the defendants, being duly sworn, testified as follows:

Q. 1. What is your name, age, residence, and occupation?

A. My name is John C. Whiting; my age is 53 years; my residence is Rochester, N. Y., and my occupation is iron-moulder.

Q. 2. How long have you been familiar with the manufacture of plow castings?

A. About 20 years.

Q. 3. How long, to your knowledge, have plow points with thinned rear edges been made?

A. Well, from 1857 down to 1879.

Q. 4. Where were such points made?

165 A. In Canandaigua, N. Y.; in Salisbury, N. C., I made the same thing; sets of patterns went from here there.

Q. 5. In whose shop were such points made in Canandaigua?

A. John Lamport. The shop was known as the Buckeye foundry.

Q. 6. Can you produce any patterns which were used at Lamport's foundry prior to 1879? And, if so, please do so.

A. I can, and hear it is.

Q. 7. Can you identify this pattern as having been used by you

to mould plow points in Lamport's foundry; and, if so, in what way?

A. Certainly; I can identify it for the moulding of points; I recognize that particularly; that is one of the original points.

Q. 8. State whether there is any special feature on that point that enables you to recognize it.

A. There is; this piece of soft metal that is put on it to strengthen it.

Q. 9. Where is this soft metal located on the point?

A. It's on that part which we used to call years ago the "shin" piece.

Q. 10. When first and for how long did you use that pattern in moulding plow points?

A. About 1 and ½ years; I worked for Mr. Lamport continuously, and I used this pattern all the time. This was in 1857.

Q. 11. Can you state approximately how many points you made from that pattern?

A. No, sir; I cannot. I know they were made by the thousands from that and its twin; they go together.

The point is offered in evidence, and the same is received and marked "Def'ts' Exhibit Lamport Point H."

166 Q. 12. Can you produce another Lamport point? And, if so, please do so.

A. I can, and here produce it.

Q. 12½. Do you recognize this also as one of the patterns you used at Mr. Lamport's?

A. I do. This I produce now is the 3-horse plow point, and the first I produced was the two-horse plow point.

The point is offered in evidence, and the same is received and marked "Defendants' Exhibit Lamport Point I."

Cross-examination waived.

JOHN C. WHITING.

STATE OF NEW YORK, }
County of Monroe, } *ss:*

On this the 18th day of February, A. D. 1888, before me personally appeared John C. Whiting, who subscribed the above deposition, and made oath that the above deposition is the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

167 Recess to 2 p. m.

2 P. M.

The parties appeared as before.

The cross-examination of Mr. OSGOOD was resumed:

X Q. 89. Is there anything in the patent of Levi W. Hall to show on what line or plane the section Fig. 3 is made?

A. It is indicated by the dotted line "*x x*."

X Q. 90. On what authority do you make that assertion?

A. On the fact that the line "*x x*" is shown and is generally understood as indicating section.

X Q. 91. Is there any indication in the specification to determine the line "*x x*" to be on the plane of the section Fig. 3?

A. I see nothing of that kind.

X Q. 92. Would, in point of fact, a section through the standard in Fig. 1 correspond with the section of Fig. 3?

A. I think it would; but it should be understood that in Fig. 1 only one of the parts is shown. In Fig. 3 both parts are shown fitted together. As I have before stated, this Fig. is not correct.

Answer objected to on the ground that it is not responsive to the question and in it the witness makes an unwarranted assumption without any authority therefor from the patent.

X Q. 93. Will you now answer me the question heretofore asked you: If the section Fig. 3 does not show the edge of point at its junction with the mold-board thicker than it is in the thinner parts and very nearly or quite as thick as the projecting ribs of the corrugation?

A. I think not.

168 X Q. 94. Will you look at Fig. 3 and swear that the line of the point next to the mold-board in that figure is not thickened with a projection downward analogous to the ribs of the corrugation?

A. It is my opinion it is not thickened.

X Q. 95. Is there no more depression at that point into the seat of the point than there is directly below it?

A. I understand the wording of this question, but I don't understand the meaning of it.

X Q. 96. What is there about the question you don't understand?

A. The whole question I don't understand.

X Q. 97. You understand what is meant by the seat of the point?

A. I understand what I should call the seat.

X Q. 98. Please explain what you understand as the seat.

A. The part upon which it rests.

X Q. 99. What rests?

A. The point.

X Q. 100. Do you not see in Fig. 3 a waved line in the cross-section indicating the division between the point and the seat or lower end of the standard of the plow upon which it rests?

A. Yes, sir.

X Q. 101. Does not that curved line at its upper end extend into the seat or standard nearly to the depth of the waved line above named and terminate in a straight line running upward to the face of the plow point?

A. Yes, sir.

X Q. 102. Does not that straight line indicate the division between the plow point and its seat?

A. Yes, sir.

169 X Q. 103. Then at that point between the seat and the edge of the plow point at that cross-section the edge of the plow point is thickened, is it not?

A. Yes, sir.

X Q. 104. As you have no authority derived from the patent for assuming on what line the cross-section Fig. 3 is made, and as you assume, further, that that cross-section is imperfect, by what authority do you assume that the upper edge of that plow point is not thinned, but that the cross-section represents a hook that hooks over the front sharp edge of the standard?

Objected to as indefinite.

A. I have not assumed that the upper edge is not thinned. On the contrary, I have stated that it is thinned.

Counsel for complainant here asserts that he did not in his previous question state the words "not thinned" in relation to the upper edge of the plow point, but that he stated that the witness had stated the edge was thinned, and I repeat the question with the word "not" left out.

The special examiner states that he wrote down the above question at the dictation of complainant's counsel and took it down correctly, and before witness answered the same the examiner read the question to said counsel as written down at his request, which was correctly read to him.

Counsel here states that if he used the word "not" in the question it was an unintentional error on his part.

X Q. 105. The question repeated with said word "not" omitted.

A. I have the authority of universal custom and understanding that dotted lines marked with reference letters such as "*x x*" indicate sections. Hence, in accordance with the custom, I assume that the dotted line "*x x*" in Fig. 1 indicates the sec-
170 tion shown in Fig. 3. It seems to have no other meaning and it corresponds with what is shown. The figures themselves and the position of the parts show that in figure 2 the upper edge of the wing comes to the center of the groove, which is the thinnest portion of the casting. The hole "*d*" is stated in the specification as coming in one of these grooves, which is the thinnest portion. At the right-hand end of the figure this groove which is shaded is carried out in round outline; so also the next groove below it. The groove above shows but half of this rounded outline and indicates clearly that the edge comes in the center of that groove and follows along that line. If the point or wing were fitted to the standard this thin-topped edge would come centrally in line along the upper rib, on the seat of the standard.

X Q. 106. Please look at Fig. 1 and say whether or not there is a depression in the seat, as indicated by the shading, from the front to the rear end thereof.

A. Yes, sir.

X Q. 107. If the plow point were constructed to conform to that

seat, there would be a projecting rib along its upper edge, would there not?

A. No; I think not necessarily.

X Q. 108. If the upper edge of the plow point were made to fill the upper depression in the seat, it would be thick on its upper edge, would it not?

A. I think not; I think — it were thin the edge would be above the thickened portion which filled the groove.

X Q. 109. What would fill the groove?

A. The corresponding rib of the point or wing.

X Q. 110. Would not that corresponding rib be on the extreme upper edge of the plow point?

A. No, sir; it would be on the other side, but the edge would be thinned off to correspond with the outline of the under side of the rib next above on the standard.

171 X Q. 111. Above the upper rib on the standard in Fig. 1 there is a depression, is there not?

A. There is a flat face which forms a portion of the standard above the ribs, being shown of triangular form in Fig. 1 and at the right of the curved line under the letter "*a*." This surface is depressed below the level of the ribs.

X Q. 112. Do you understand that the line at the lower edge of that triangular part that you say is depressed is sunk below the light space just beneath it, and that the outline next to the front of the standard makes a rising there?

A. Yes, sir; that line below the triangular space is the top outline of the upper rib, and the curved line at the right is the perspective view of the end of the upper side.

RUFUS F. OSGOOD.

The plow point lettered F, testified to by defendants' witness Cummings, is offered in evidence, and the same is received and marked "Defendants' Exhibit F."

Rufus F. Osgood, recalled for the defendants, testified as follows:

Q. 113. Please compare "Defendants' Exhibit G" and "Defendants' Exhibits H and I" and state whether or not there is any substantial difference between the said points, so far as relates to the rear portions thereof, which joins the mold-board.

A. I see no substantial difference. They are all three bevelled in cross-section, being thinnest at the upper edge and thickening as they go down similar in shape as far as I can see.

RUFUS F. OSGOOD.

172 State of New York, } ss.:
County of Monroe, }

On this the 18th day of February, A. D. 1888, before me personally appeared Rufus F. Osgood, who subscribed the above depositions, and made oath that the same are the truth, the whole truth, and nothing but the truth.

C. D. KIEHEL,
Notary Public.

Defendants' case closed.

STATE OF NEW YORK, } ss:
County of Monroe, }

I, C. D. Kiehel, a notary public and special examiner within and for the State of New York, do hereby certify that the foregoing depositions of Lewis B. White, William J. Mack, John T. Moxley, Truman V. Fox, George Whitbeck, Rufus F. Osgood, and John C. Whiting were taken on behalf of the defendants, J. S. Robinson & Son, pursuant to stipulation, which is hereto annexed and made a part of these depositions, before me, at No. 54 Arcade, in the city of Rochester, beginning on the 14th day of February, 1888, and ending on the 18th day of February, 1888, as noted hereinbefore; that each of said witnesses was by me duly sworn before the
173 commencement of his testimony; that said testimony was written out by me in the presence of said witnesses; that the complainant herein appeared, by its solicitor, J. J. Greenough, Esq., and counsel, E. C. Wright, during the taking of said testimony.

That I am not connected by blood or marriage with either of said parties nor interested, directly or indirectly, in the matter in controversy.

In testimony whereof I have hereunto set my hand
[L. S.] and affixed my seal of office this 20th day of February, 1888.

C. D. KIEHEL,
Notary Public and Special Examiner.

174 DEFENDANTS' EXHIBITS.

"DEF'TS' EXH. JUDD FILE-WRAPPER & CONTENTS." C. D. K., N. P. & Spec. Ex. Feb. 14, '88.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the files of this office of the file-wrapper and contents in the matter of the letters patent granted James L. Judd, assignor of one-half his right to Harry Wiard, August 31, 1880, number 231,810, for improvement in plow.

175 In testimony whereof I, Benton J. Hall, Commissioner of Patents, have caused the seal of the Patent Office to be affixed this
[L. S.] 15th day of September, in the year of our Lord one thousand eight hundred and eighty-seven, and of the Independence of the United States the one hundred and twelfth.

BENTON J. HALL,
Commissioner.

SYRACUSE, *24th June*, 1880.

Commissioner of Patents.

SIR: I herewith inclose the complete case (no model) of J. L. Judd for improvement in plows, together with assignment of one-

half to H. Wiard, for record, with $15 fee. The record of the assignment please charge to my account.

Yours, etc., J. J. GREENOUGH.

(Indorsed:) U. S. Patent Office, June 26, 1880.

To the Commissioner of Patents:

Your petitioner, a citizen of the United States, residing at Syracuse, State of New York, prays that letters patent may be granted to himself and Harry Wiard, a citizen of the United States, residing at Syracuse aforesaid, as his assignee, for the improvement in plows set forth in the annexed specification, the assignment to the said Harry Wiard, of even date with the execution of this instrument, having been filed in the Patent Office for record.

JAMES L. JUDD.

I concur in the above power of attorney.

HARRY WIARD.

176 STATE OF NEW YORK, } ss:
County of Onondaga, }

James L. Judd, the above-named petitioner, being duly sworn, deposes and says that he verily believes himself to be the original and first inventor of the improvement in plows described and claimed in the following specification; that he does not know or believe that the same was ever before known or used, and that it has not been patented to him nor with his knowledge and consent in any foreign country, or to his knowledge been introduced into public use in the United States for more than two years prior to the filing of this application.

JAMES L. JUDD.

Subscribed and sworn to before me this 21st day of June, 1880.

[L. S.] J. C. CHASE,
Notary Public.

To all whom it may concern:

Be it known that I, James L. Judd, of the city of Syracuse, New York, have invented a certain new and useful improvement in forming the joints of the point, mold-board, landside, etc., of plows, of which the following is a specification:

It is found in practice that considerable labor is required to grind the meeting edges of the several parts at the joints, and especially when they consist of chilled or very hard metal castings. I remedy this difficulty in the following way, which at the same time serves to strengthen and give stability to the union of the parts, which is shown and illustrated in the accompanying drawing, in which Fig. 1 shows the under side of the plow-point; Fig. 2, the seat of the plow point on standard. Fig. 3 shows the inside of the landside A
177 and its rest B; Fig 4, a cross-section at right angles to a joint, showing the relative position of the parts. Along the line of junction of the superimposed plates there is a bead or rib, *a*, pro-

jecting from the seat on which the plate or plates rest, and along the meeting edges of the point (see Fig. 1) and other parts the under or inside is chamfered off at the meeting edge *b* to fit said rib, *a*, as is clearly seen in the figures on the drawing, by which the edge at the joint is made thin, so as to be readily and expeditiously ground and fitted with a minimum amount of labor, while the thin edges when in place are firmly sustained by the rib *a* aforesaid, as is clearly illustrated in Fig. 4, which also aids to keep the parts steadily in place when screwed together.

Having thus fully described my device, I claim:

In a plow frame or seat.

1st. A [In a plow frame or seat,] the rib *a*, formed on the seat along the line of junction of the superimposed parts, as and for the purposes specified.

See A, July 21, '80. (See B, July 30, '80.)	2d. The chamfered edges *b* of the plow point, mold-board, and landside, etc., as and for the purposes specified.

[3d.]* 2d. The combination of the ribs *a* and chamfered edges *b* in plow castings, substantially as and for the *the* purposes specified.

JAMES L. JUDD.

Signed in presence of—
J. J. GREENOUGH.
R. A. McENTEE.

(Indorsed:) Specification, Jas. L. Judd. Plows. J. J. Greenough att'y. U. S. Patent Office, June 26, 1880. 12497. $\frac{4}{8}\frac{5}{3}$. Jas. L. Judd, Specification, June 26, 1880.

178 Room 14. 12497.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., *July* 16, 1880.

Jas. L. Judd, J. J. Greenough, Syracuse, N. Y.

Plows. $\frac{4}{8}\frac{5}{3}$. June 26th, 1880.

In this case the 1st claim is objected to, as similar fashions are found connected with shafting and in pipe couplings and perhaps elsewhere. Prefix the words "In a plow frame or seat," and a claim might be allowed.

The 2d is held to be without patentability, undercut or chamfered edges being common, especially the upper edge of plowshare made so to prevent the joint filling with dirt. See B. F. Chandler, August 7, 1887, No. 193,923 (points).

The 3d is not objected to.

R. G. PARKS, *Ass't Ex.*
D. C. FOX, *Examiner.*

Words and sentences enclosed between rules erased in copy.
* Words and figures enclosed in brackets erased in copy.

(Indorsed:) 12497. $\frac{45}{93}$. J. L. Judd, R. E. J. July 16, '80. July 21, '80.

Room 116.

SYRACUSE, 19 *July*, 1880.

Commissioner of Patents.

SIR: In the matter of the application for patent of Jas. L. Judd for improvement in plows, filed June 26, 1880, we hereby amend the claims by adding to the beginning of the first claim the words:

"A." Erase and insert B, July 30, '80. "In a frame or seat."

I wipe out the second claim.

Respectfully, etc., J. J. GREENOUGH.

[Endorsed:] 12497. $\frac{45}{93}$. J. L. Judd. Am'd'nt, July 21, '80. Div. 1. U. S. Patent Office, July 21, 1880.

179 SYRACUSE, 28*th July*, 1880.

Commissioner of Patents.

SIR: In the matter of the application of J. L. Judd for patent for improvement in plows we hereby amend our first claim so as to read:

July 30, '80. "B." "In a plow frame or seat."

Respectfully, etc., J. J. GREENOUGH, *Attorney*.

(Indorsed:) 12497. $\frac{45}{93}$. J. L. Judd. Am'd't, July 30, '80. Div. 1. U. S. Patent Office, room 116, July 30, '80.

SYRACUSE, 10*th August*, 1880.

Commissioner of Patents.

SIR: Herewith I inclose the final fee in the case of James L. Judd for plows, allowed 5 August, 1880.

Respectfully, etc., J. J. GREENOUGH.

(Indorsed:) U. S. A., Patent Office, Aug. 12, 1880.

12497. 1880. $\frac{45}{93}$.

Div. 1.

No. 231,810.
James L. Judd,
Assignor of one-half his right to
Harry Wiard, of same place,
Of Syracuse,
County of ——,
State of New York.

180 *Plows.*

Received	June	26,	1880.
Petition,	"	"	"
Affidavit,	"	"	"
Specification,	"	"	"
Drawing,	"	"	"

Model not required.
Cert. dep., —.
Cash, $15, June 26, 1880.
Additional fee certified.
" " cash, $20, August 12, 1880.
1. Examined Aug. 4, 1880, D. C. Fox.
2. Issue, Aug. 5, 1880, Arthur W. Crossley.
3. Patented August 31, 1880.
Circular, Aug. 5, 1880.

J. J. GREENOUGH,
Syracuse, N. Y.

181 1880.

Contents.

Application papers.
1. Rej., July 16th, 1880.
2. Amend't "A," July 21, '80.
3. Amend't B, July 30, '80.
4.
5. Brief.
6.
7.
8.
9.
10. 97 plows.
11. Plows.
12.
13.
14.
15.
16.
17.
18.
Title: Improvement in plows.
P. A. G.; L. C. G.

183 UNITED STATES PATENT OFFICE.

JAMES L. JUDD, of Syracuse, New York, assignor of one-half of his right to Harry Wiard, of same place.

Plow.

Specification forming part of Letters Patent No. 231,810, dated August 31, 1880; application filed June 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, James L. Judd, of the city of Syracuse, New York, have invented a certain new and useful improvement in forming the joints of the point, mold-board, landside, &c., of plows, of which the following is a specification.

It is found in practice that considerable labor is required to grind the meeting edges of the several parts at the joints, and especially when they consist of chilled or very hard metal castings. I remedy this difficulty in the following way, which at the same time serves to strengthen and give stability to the union of the parts, which is shown and illustrated in the accompanying drawings, in which—

(Here follows diagram marked p. 182.)

Figure 1 shows the under side of the plow-point; Fig. 2, the seat of the plow-point on the standard. Fig. 3 shows the inside of the landside and its seat; Fig. 4, a cross-section at right angles to a joint, showing the relative position of the parts.

Along the lines of junction of the superimposed plates there is a bead or rib, *a*, projecting from the seat on which the plate or plates rest, and along the meeting edges of the point (see Fig. 1) and other parts, the under or inside is chamfered off at the meeting edge *b* to fit said rib *a*, as is clearly seen in the figures on the drawings, by which the edge at the joint is made thin, so as to be readily and expeditiously ground and fitted with a minimum amount of labor, while the thin edges, when in place, are firmly sustained by the rib *a* aforesaid, as is clearly illustrated in Fig. 4, which also aids to keep the parts steadily in place when screwed together.

Having thus fully described my device, I claim—

1. In a plow frame or seat, the rib *a*, formed on the seat along the line of junction of the superimposed parts, as and for the purposes specified.

2. The combination of the ribs *a* and chamfered edges *b* in plow-castings, substantially as and for the purposes specified.

JAMES L. JUDD.

In presence of—
J. J. GREENOUGH.
R. A. McENTEE.

(Indorsed:) Filed June 26, 1888.

185 UNITED STATES PATENT OFFICE.

BENJAMIN F. CHANDLER, of Three Locusts, Ohio.

Improvement in Plows.

Specification forming part of Letters Patent No. 193,923, dated August 7, 1877; application filed April 25, 1877.

To all whom it may concern:

Be it known that I, Benjamin F. Chandler, of Three Locusts, in the county of Marion and State of Ohio, have invented certain new and useful improvements in plows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying draw-

(No Model.)

J. L. JUDD.

Plow.

No. 231,810. Patented Aug. 31, 1880.

Fig. 1.

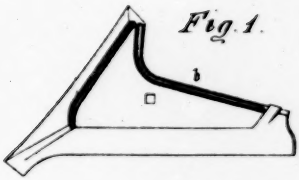


Fig. 2.

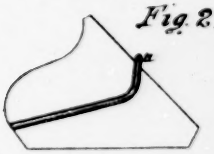
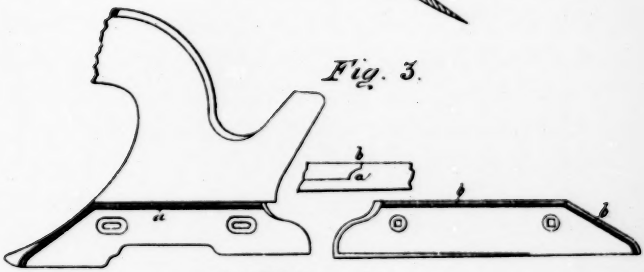


Fig. 4.

Fig. 3.



no 239.
Syracuse Chilled
Plow Co
vs
Robinson et al.
} p. 182

Witnesses:
A. Johnson
F. West

Inventor:
James L. Judd
by J. J. Greenough Atty.

Defts. Exh. Chandler Patent 184
C.D.K. N.P. v Spec. Ex. Feb. 14. '88.

B. F. CHANDLER.

PLOWS.

No. 193,923. Patented Aug. 7. 1877.

Fig. 1.

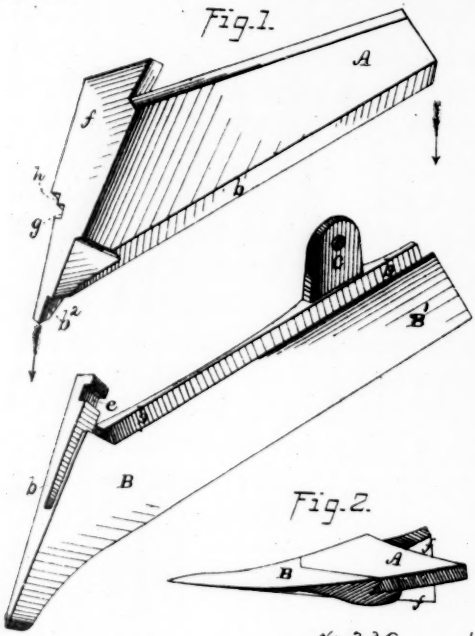
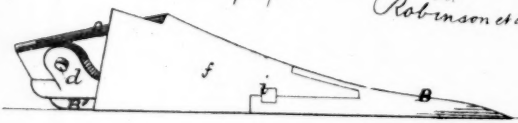


Fig. 2.

No. 239.
Syracuse Chilled Plowleo. v. Robinson et al. } p. 184

Fig. 3.



WITNESSES:
Jas. G. Hutchinson.
D. Wm. McIlster.

INVENTOR.
B. F. Chandler
Edson Bros.
Attorneys.

ings, and to the letters of reference marked thereon, which form a part of this specification, and in which—

(Here follows diagram marked p. 184.)

Figure 1 is a view, in perspective, of my improved plow, showing the share and its point separated. Fig. 2 is a horizontal section thereof, and Fig. 3 is side view of the same.

Corresponding parts in the several figures are denoted by like letters.

This invention relates to a certain improvement in plows; and it consists in rendering the point detachable, substantially as hereinafter more fully set forth.

In the annexed drawing, A refers to the share, and B to the point, which is extended, as at B′, to form the blade or cutting-surface of the share. In the rear end of the point B, and extending along its extended portion B′, is a V-shaped slot or groove, *b*, which receives and fits upon the front edge of the share A, the share being beveled or tapered, as at b^1 and b^2, to permit of its insertion therein, as seen in Figs. 2 and 3. One leg of the V-shaped groove *b* is longer than the other, and binds against the share, thus breaking joints with its shorter leg. The extended portion of the point B is cast with a perforated plate or projection, *c*, through which is inserted a tapering pin, *d*, for connecting the said portion B′ with the share. The rear end of the point B is recessed, as at *e*, and the lower or horizontal portion *f* of the share A stepped and recessed, as at *g h*, to allow the two to fit together, as seen in Fig. 3, and also to provide an orifice or aperture for the reception of a bolt, *i*, to unite the point to the share.

Having thus described my invention, what I claim, and desire to secure by letters patent, is—

The point B B′, having the extended V-shaped slot or groove *b*, recess *e*, and perforated projection *c*, in combination with the share A, beveled and tapered, as at b^1 b^2, and recessed and stepped, as at *g h*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

BENJAMIN F. CHANDLER.

Witnesses:

JOBE CAMPBELL.
J. M'CUNE.

(Indorsed:) Filed Sep. 25, 1888. W. S. Doolittle, cl'k.

187 UNITED STATES PATENT OFFICE.

JAMES F. BENTON, of Penn Yan, New York.

Improvement in Plows.

Specification forming part of Letters Patent No. 142,074, dated August 26, 1873; application filed December 5, 1872.

To all whom it may concern:

Be it known that I, James F. Benton, of Penn Yan, in the county of Yates and State of New York, have invented certain improvements in plows, of which the following is a specification:

My invention relates to constructing and attaching to any ordinary plow an adjustable regulating-sole that will regulate the depth of furrow made by the plow, and allow the plowshare to be made with more pitch in the point to increase the durability; and by raising the sole as the share is worn the plow will work uniformly into the soil while the share is being worn.

(Here follows diagram marked p. 186.)

Figure 1 is a land-side elevation; Fig. 2, a longitudinal section, showing the sole attached.

A is the plow. It may be constructed in any ordinary manner, with wood or iron beam, and may have the ordinary plowshare; or the point of the share may have more pitch, if desired. The only deviation from the ordinary construction is placing the bolts of the plow in such manner as not to be in the way of the sole, and making holes in the land-side part for the necessary bolts to hold the sole in its proper position. B is the sole. Its shape and position are shown in Fig. 2. It may be made any length, size, or shape, to suit the various kind of plows to which it may be applied. It may be made in shape as represented in Fig. 2, or any other convenient shape that will allow it to accomplish the same effect. The rear end has a pivot projecting inward that enters a slot in the land-side portion of the plow. The forward end is turned upward, as shown in the figure, and near the middle of the upper surface is an angular projection that has a slot for the bolt that holds it. The projection inclines backward for the purpose of moving the sole forward when it is lowered. The obliquity of the angle of the projection should nearly correspond with the inner angle of the forward part of the plow to which it is applied. The forward end should be made as wide at the under side as the plow will admit, and must be shaped to suit the various kinds of plows it is applied to. The bolt that holds it may be put through the whole of the land-side portion, or may be put through a part only.

To use my invention when the plowshare is new, lower the sole by loosening the bolt that holds it, and lower it until the plow will cut the depth of furrow required; and, as the share becomes worn, raise the sole, and thus continue until the share is worn out; then

"Defts Exh. Benton Patent" 186

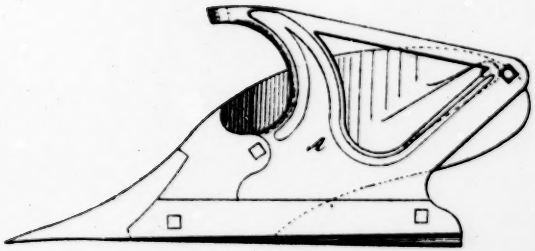
C.D.K. - N.P. & Spec. Ex. Feb. 14. '88

J. F. BENTON.

Plows.

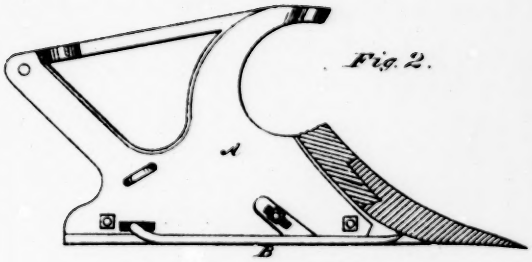
No. 142,074. Patented August 26, 1873.

Fig. 1.



No. 239.
Syracuse Chilled Plow Company
v.
Robinson et al.
} p. 186.

Fig. 2.



Witnesses:
John L. Lewis
Charles Ketchum

Inventor:
James F. Benton

188

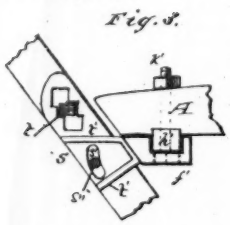
Defts Exh. White's patent.

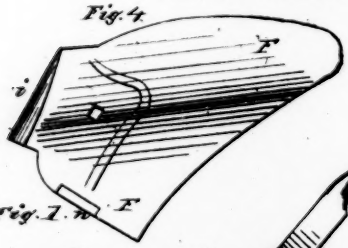
C.D.K. N.P. & Spec. Ex. Feb. 14, '88.

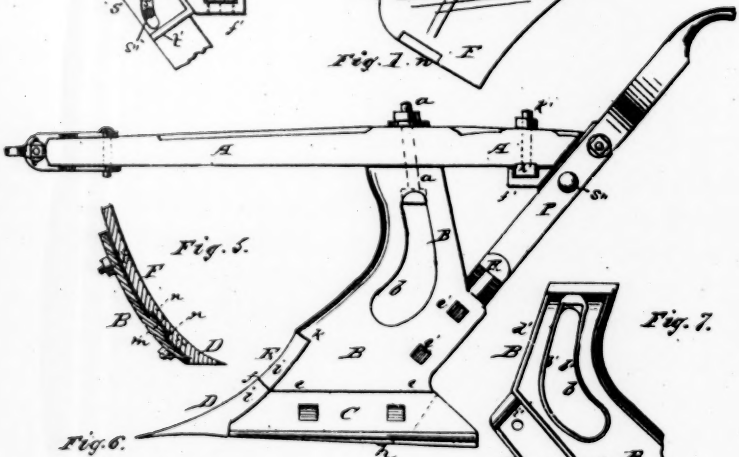
L. B. WHITE.

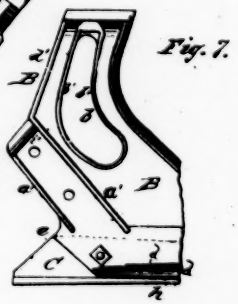
Plow.

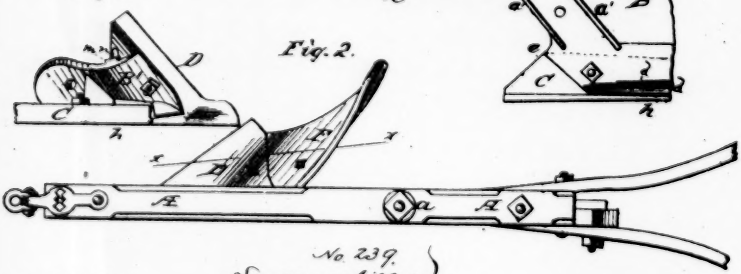
No. 164,952. Patented June 29, 1875.











WITNESSES:
P. C. Dieterich
H. C. Smith

No. 239.
Syracuse Chilled Plow Company
v.
Robinson et al.
p. 188

INVENTOR:
Lewis B. White

per C. H. Watson & Co
ATTORNEYS.

put on a new one, and repeat as before; and in most all kinds of soil the sole will obviate the use of the wheel on the end of the plow-beam, and, when transporting the plow about the farm, lower the sole, so that the point of the share cannot enter the ground, and the plow may be drawn anywhere with perfect ease.

I claim—

The adjustable sole B, when pivoted to the rear end of the land-side and secured by the slotted stud, as described.

JAMES F. BENTON.

Witnesses:
JOHN L. LEWIS.
T. C. BRECHT.

(Indorsed:) Filed Sep. 25, 1888. W. S. Doolittle, clerk.

189 UNITED STATES PATENT OFFICE.

LEWIS B. WHITE, of Norfolk, Virginia, assignor to himself and S. R. White, of same place.

Improvement in Plows.

Specification forming part of Letters Patent No. 164,952, dated June 29, 1875; application filed May 8, 1875.

To all whom it may concern:

Be it known that I, Lewis B. White, of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful improvements in plows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in certain improvements upon the plow for which letters patent No. 140,749 were granted to me July 8, 1873, as will be hereinafter more fully set forth.

(Here follows diagram marked p. 188.)

In the annexed drawing, figure 1 is a side elevation of my improved plow. Fig. 2 is a plan view of the same. Figs. 3, 4, 5, 6, and 7 are detached views of certain parts thereof.

A represents the plow-beam, to which the frame B is secured by a bolt, *a*, passing up through the top of the frame and through the plow-beam. The opening *b* in the frame is curved forward at its upper end, for the purpose of throwing the bolt *a* farther forward, and thus decrease the leverage from the front end of the beam, and thereby lessen the liability of breaking the bolt. The side of the frame is formed with a horizontal shoulder, *e*, at a suitable height above the lower edge, and along said lower edge is formed an inwardly-projecting inclined and tapering flange, *d*, which is made

slightly concave on its under surface. At the point of the frame B is formed a shoulder or abutment, *f*. The inside of the frame B is formed with flanges *b'* around the opening *b*, and also with two parallel flanges, *a' a'*, and with a flange, *d'*, as shown in Fig. 7, to obtain the greatest amount of strength. C represents the land-side, which is made pointed at both ends, and provided on each side with a tapering flange, *h*, which commence from opposite ends and gradually run into the body of the land-side, said flanges being convex on their upper surfaces to fit against the concave flange *d* of the frame. When the land-side C is fastened to the frame its upper edge is against and flush with the shoulder *e*, its point against the abutment *f*, and the flange *h* on its inner side up against the flange *d* of the frame. As the outer side of the land-side becomes too much worn it can be reversed and put back in place, and one end of the flange on the lower part of the land-side is thicker than the other, so that when worn it is reversed. D represents the plow share or point, and E the mold-board. These are both at their inner edges constructed with a flange, *i*, to form a V-shaped groove, which fits over the edge of the frame, and the flange of the mold-board at its upper end interlocking with a shoulder, *k*, on the frame. When the share and mold-board are fastened in place they form one continuous curve from the point to the shoulder *k*, and at this shoulder on the frame is formed, so to say, an elbow, the upper end of the frame forming another curve. On the wing of the frame B is formed a rib, *m*, which comes directly at the junction of the share and mold-board, and fits in recesses *n*, made in their edges for that purpose. This rib acts as a guide in putting on the share and mold-board, and in drilling or reaming the bolt-holes therein. It also acts as a stop for the share and mold-board, so as to relieve the bolts which fasten the same from undue strain, and to prevent the twisting of either share or mold-board. This is of great importance, from the fact that both the share and mold-board are each fastened only by a single bolt.

It will be seen that in operation the flanges *i* of the share and mold-board protect the edge of the frame, and, as they project beyond the edge, they also protect the side of the frame.

P P represent the handles, the lower ends of which are laid between the flanges *a' a'* and fastened by bolts *e' e'*, the flanges holding the handles firmly in position and relieving the strain on the bolts. Between the frame and the handles is inserted a slotted wedge, R, to pass over the upper bolt, *e'*, and the outer side of this wedge is toothed, as shown in Fig. 1. Between the upper rear ends of the flanges *a' a'* is formed an edge, *i'*, which engages with the toothed wedge R, to hold the same and prevent its slipping. The object of this wedge is to adjust the handles, as required, more or less to either side. Between the handles P P, in rear of the beam A, is fastened a slotted and flanged casting, S, formed with a projection, *f'*, on its front edge. This projection is recessed on its upper side, and provided with an elongated slot. On the under side, at the rear end of the beam A, is a block, *h'*, let into the beam, which block fits into the recess in the projection *f'*, said pro-

jection resting against the under side of the beam, as shown in Fig. 3. A bolt, k', is then passed through (from underneath) the slotted projection, block, and beam, and fastened by a nut on top. The rear portion of the casting S forms a flanged extension between the handles, having a slot, s', in the lower part, to allow the casting to move over the bolt s''. The upper portion is also slotted and provided with angular openings corresponding in form to the shape of the bolt-head, by which means the casting is adjusted and held in place. The casting is also provided with ribs t', which holds one of the handles in proper position.

Having thus fully described my invention, what I claim as new, and desire to secure by letters patent, is—

1. The tapering concave flange d, formed on the lower edge of the frame B, in combination with the reversible double-pointed land-side C, provided with tapering flanges h, made thicker on one end than on the other, substantially as and for the purpose specified.

2. The frame B, provided with flanges a' a' and edge i', in combination with the slotted and corrugated wedge B and handles P, all as and for the purpose herein specified.

3. The casting S, having recessed and slotted projection f', flanges or ribs t' t', slot s'', and slot for bolts t, in combination with handles P, beam A, and block h, all as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEWIS B. WHITE.

Witnesses:
C. H. WATSON.
X. C. SCOTT.

(Indorsed:) Filed Sep. 25, 1888. W. S. Doolittle, clerk.

191 "DEF'TS' EXH. WHITE FILE-WRAPPER & CONTENTS."
C. D. K., N. P. & Spec. Ex. Feb. 14, '88.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the files of this office of the file-wrapper and contents in the matter of the letters patent granted Lewis B. White, assignor to himself and S. R. White, June 29, 1875, number 164,952, for improvement in plows.

In testimony whereof I, Benton J. Hall, Commissioner of Patents, have caused the seal of the Patent Office to be affixed this
[L. S.] 13th day of September, in the year of our Lord one thousand eight hundred and eighty-seven, and of the Independence of the United States the one hundred and twelfth.

BENTON J. HALL,
Commissioner.

Petition.

To the Commissioner of Patents:

Your petitioner, a resident of Norfolk, Virginia, pray- that letters patent be granted to him for the invention set forth in the annexed specification, vesting in him and his legal representatives the exclusive right of the same upon the terms and conditions expressed in the act of Congress in that case made and provided.

And further prays that you will recognize C. H. Watson & Co., of Washington, D. C., as his attorneys, with full power of sub-
192 stitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected therewith.

LEWIS B. WHITE.

Specification.

To all whom it may concern:

Be it known that I, Lewis B. White, of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful improvements in plows; and I do hereby declare that the following is a full, clear, and exact description thereof which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings and *on* the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in certain improvements upon the plow for which letters patent No. 140,749 were granted to me July 8, 1873, as will be hereinafter more fully set forth.

In the annexed drawings—

Figure 1 is a side elevation of my improved plow.

Figure 2 is a plan view of the same.

Figures 3, 4, 5, 6, and 7 are detached views of certain parts thereof. A represents the plow beam, to which the frame B is secured by a bolt passing up through the top of the frame and through the plow beam.

The opening *b* in the frame is curved forward at its upper end for the purpose of throwing the bolt *a* farther forward and thus decrease the leverage from the front end of the beam and thereby lessen the liability of breaking the bolt. The side of the
193 frame is formed with a horizontal shoulder, *e*, at a suitable height above the lower edge, and along said lower edge is formed an inwardly projecting inclined and tapering flange, *a*, which is made slightly concave on its under surface. At the point of the frame B is formed a shoulder or abutment, *f*. The inside of the frame B is formed with flanges b^1 around the opening *b*, and also with two parallel flanges a^1 a^1 and with a flange, d^1, as shown in figure 7, to obtain the greatest amount of strength. C represents the landside, which is made pointed at both ends and provided on each side with a tapering flange, *h*, which commence from opposite ends and gradually run into the body of the landside, said flanges

being convex on their upper surfaces to fit against the concave flange *d* of the frame. When the landside C is fastened to the frame its upper edge is against and flush with the shoulder *e*, its point against the abutment *f*, and the flange *h* on its inner side up against the flanges of the frame. As the outer side of the landside becomes too much worn it can be reversed and put back in place, and one end of the flange on the lower part of the landside is thicker than the other, so that when worn it is reversed. D represents the plow-share or point and E the mold-board. These are both, at their inner edges, constructed with a flange, *i*, to form a V-shaped groove, which fits over the edge of the frame and the flange of the mold-board at its upper end, interlocking with a shoulder, *k*, on the frame, where the share and mold-board are fastened in place. They form one continuous curve from the point to the shoulder *k*, and at this shoulder on the frame is formed, so to say, an elbow, the upper end of the frame forming another curve. On the wing of the frame B is formed a rib, *m*, which comes directly at the junction of the share and mold-board and fits in recesses *n* made in their edges for the pur-
194 pose. This rib acts as a guide in putting on the share and mold-board and in drilling or reaming the bolt-holes therein. It also acts as a stop for the share and mold-board, so as to relieve the bolts which fasten the same frame under strain and to prevent the twisting of either share or mold-board. This is of great importance from the fact that both the share and mold-board are each fastened only by a single bolt. It will be seen that in operation the flanges *i* of the share and the mold-board protect the edge of the frame, and as they project beyond the edge they also protect the side of the frame. P P represent the handles, the lower ends of which are laid between the flanges a^1 a^1 and fastened by bolts e^1 e^1, the flanges holding the handles firmly in position and relieving the strain on the bolts. Between the frame and the handles is inserted a slotted wedge, R, to pass over the upper bolt e^1, and the outer side of this wedge is toothed, as shown in figure 1. Between the upper rear ends of the flanges a^1 a^1 is formed an edge, i^1, which engages with the toothed wedge R to hold the same and prevent its slipping. The object of this wedge is to adjust the handles as required, more or less to either side. Between the handles P P, in rear of the beam A, is fastened a slotted and flanged casting, S, formed with a projection, f^1, on its front edge. This projection is recessed on its upper side and provided with an elongated slot. On the under side, at the rear end of the beam A, is a block, h^1, let into the beam, which block fits into the recess in the projection f^1, said projection resting against the under side of the beam, as shown in figure 3. A bolt, k^1, is then passed through (from underneath) the slotted projection, block, and beam and fastened by a nut on top.

Erase and insert A, June 3, 1875.

By these means the handles may be adjusted to the beam and fastened firmly in any desired position.

* Words and sentences enclosed between rules erased in copy.

Having thus fully described my invention, what I claim as new, and desire to secure by letters patent, is:

Erase and insert B, June 3. 195

1st. The frame B, constructed as described, with its opening *b* curved forward and having flanges b^1, a^1, and d^1, shoulder *e*, and abutment *f*, all substantially as and for the purposes herein set forth.

2d. The tapering concave flange *d*, formed on the lower edge of the frame B, in combination with the double-pointed landside C, made thicker at one end, provided with the tapering flanges *h*, ʌ substantially as and for the purposes herein set forth.

3d. The combination, with the frame B, having shoulder *k*, of the share D and mold-board E, having flanges *i*, as and for the purposes set forth.

4th. The rib *m* on the wing of the frame, in combination with the recesses *n* in the share and mold-board, substantially as and for the purposes herein set forth.

5th. In combination with the frame B, flanges *a a*, ʌ and handles P, the slotted toothed wedge R and edge e^{11}, for the purposes herein set forth.

6th. In combination with the beam A and handles P, the slotted casting S, with recessed and slotted projection f^1, block h^1, and bolt *k*, all in one piece, as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEWIS B. WHITE.

Witnesses:
C. H. WATSON.
H. C. SCOTT.

196 *Oath.*

DISTRICT COLUMBIA, } ss:
County of Washington, }

On this 6th day of May, 1875, before me, the subscriber, a notary public, personally appeared the within-named Lewis B. White and made solemn oath that he verily believes himself to be the original and first inventor of the within-described improvements in plows, and that he does not know or believe the same was ever before known or used, and that he is a citizen of the United States.

Subscribed and sworn to before me this 6th day of May, 1875.

WILLIAM L. BRAMHALL,
[L. S.] *Notary Public.*

* Words and sentences enclosed between rules erased in copy.

(Indorsed:) U. S. Patent Office. In the matter of the application of —— —— (U. S. Patent Office, May 8, 1875) for letters patent for — petition, oath, specification, and power of attorney. $\frac{58}{38}$.

Examiner's room No. 116.

UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., *May* 26, 1875.

L. B. White, C. H. Watson & Co., present.

Plows. $\frac{58}{38}$. Filed May 8, 1875.

The features of the 1st and 2d, 3d, and 6th claims are substantially shown in this applicant's patent of July 8, 1873, No. 140,749, plows, and the attorney is referred to that case as a bar to said claims. The 4th is met by the patent to Gabriel Utley, May 26, 1868, No. 78339, and T. E. C. Brinley, June 17, 1873, No. 140,004, plows. The use of wedges, slotted, notched, and otherwise, to adjust all parts of plows is so general that there is held to be no novelty in the 5th claim. See the patents to S. T. Ferguson, Feb. 16, 1875, No. 159,913, and J. M. Lingley, April 14, 1874, No. 149,694, plows.

R. S. PARKS,
2d Assistant Examiner.
O. C. FOX, *Examiner.*

Copy sent May 26, 1875.

(Indorsed:) L. B. White. Rej. May 26, '75. $\frac{58}{38}$.

197 *Amendment.*

L. B. White. Plow. Filed May 8, 1875. $\frac{58}{38}$.

Erase all matter after the word top, line 9, on page 6, and insert

A, June 3. The rear portion of the casting S forms a flanged extension between the handles, having a slot, s^1, in the lower part to allow the casting to move over the bolt s^{11}. The upper portion is also slotted and provided with angular openings corresponding in form to the shape of the bolt head, by which means the casting is adjusted and held in place. The casting is also provided with ribs t^1, which holds one of the handles in proper position.

Erase claims and insert:

B. 1st. The tapering concave flange *d* formed on the lower edge of the frame B, in combination with the reversible, double-pointed landside C, provided with tapering flanges *h*, made thicker on one end than on the other, substantially as and for the purpose specified.

Erase per C, June 10, 1875. 2d. The rib *m* on the frame, in combination with the share and mold-board, each being provided with recesses *n*, all constructed as and for the purpose set forth.

Words and sentences enclosed between rules erased in copy.

[3d.]* 2. The frame B, provided with flanges a^1 a^1 and edge i^1, in combination with the slotted and corrugated wedge B and handles P, all as and for the purpose herein specified.

[4th.]* 3. The casting S, having recessed and slotted projections f^1, flanges or ribs t^1 t^1, slot s^{11}, and slot for bolt t, in combination with handles P, beam A, and block h, all as and for the purpose set forth.

Erase per C, June 10. [5th.]* 4. The frame B, provided with wing B, and the concave flange d, substantially as and for the purpose set forth.

Erase per C, June 10. 198 [6th.]* 5. The combination plowshare D and mold-board E, formed with a flange i, forming a V-shaped groove to fit over the edge of the frame and having interlocking shoulder k, the share and mold-board forming one continuous curve from the point to the shoulder k, and at that point forming an elbow or another curve to the top of standard, all constructed as and for the purpose specified.

C. H. WATSON & CO., *Attorneys.*

(Indorsed:) L. D. White. Amendment, June 3, '75. $\frac{5}{3}\frac{8}{8}$. U. S. Patent Office, June 3, 1875.

Examiner's room No. 116.

U. S. PATENT OFFICE,
WASHINGTON, D. C., *June* 9, 1875.

L. B. White, C. H. Watson & Co., present.

No. 1. Plows. $\frac{5}{3}\frac{8}{8}$. Filed May 8, 1875.

The 1st, 3d, and 4th claims are not objected to. The 2d is rejected on Brinley's patent before cited. See also E. Wiard, Aug. 31, 1869, No. 94366, plows.

The 5th and 6th on applicant's former patent. There is no difference except a slight variation of the curve of the standard above the mold-board.

R. S. PARKS,
2d Assistant Examiner.
O. C. FOX, *Examiner.*

Copy sent June 9, 1875. O.

[Endorsed:] L. B. White. Rej. June 9, '75. $\frac{5}{3}\frac{8}{8}$.

* Words and figures enclosed in brackets erased in copy.
Words and sentences enclosed between rules erased in copy.

Amendment. $\frac{58}{38}$.

L. B. White. $\frac{58}{39}$.

C, June 10. Erase 2d, 5th, and 6th claims and change numbers to correspond.

C. H. WATSON & CO., *Attorneys.*

(Indorsed:) L. B. White. Amendment, June 10, '75. $\frac{58}{38}$. U. S. Patent Office, June 10, 1875.

199 *Memorandum of Fee Paid at United States Patent Office.*

Inventor, L. B. White.
Patent to be issued to inventor.
Invention, plow (there are two cases same date).
Date of payment, June 23, 1875.
Final fee, $20.
Solicitor, C. H. Watson & Co. Send to inventor.

(Indorsed:) U. S. Patent Office, June 23, 1875.

1875. Fox. $\frac{58}{38}$.

No. 164,952.

Lewis B. White, assignor to self and S. R. White, of same place,
Of Norfolk,
County of Norfolk,
State of Virginia.

Plows.

Received May 8, 1875.
Petition, " " "
Affidavit, " " "
Specification, " " "
Drawing, " " "
Model, " " "
Cert. dep., " " "
1. Cash, $15, " " "
1. Additional fee certified.
Cash, $20, June 23, 1875.
Examined June 18, 1875, O. C. Fox.
Issue, June 19, 1875, Knight.
4. Patented June 29, 1875.
Circular, June 19, 1875.

C. H. WATSON & CO., *Present.*

200 1875.

Contents.

Application, 1 paper.

1. Rej. May 26th, 1875.
2. Am'd't June 3, 1875.

3. Rej. June 9th, 1875.
4. Am'd't June 10, 1875.
5.
6. Brief.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16. 97, plows.
17. (114) plows.
18. Div. 1.
Title: Improvement in plows.
F. E. C.; S. P. P.

202 UNITED STATES PATENT OFFICE.

LEWIS B. WHITE, of Norfolk, Virginia, assignor to himself and S. R. White, of same place.

Improvement in Plows.

Specification forming part of Letters Patent No. 164,952, dated June 29, 1875; application filed May 8, 1875.

To all whom it may concern:

Be it known that I, Lewis B. White, of Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful improvements in plows; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in certain improvements upon the plow for which letters patent No. 140,749 were granted to me July 8, 1873, as will be hereinafter more fully set forth.

(Here follows diagram marked p. 201.)

In the annexed drawing, figure 1 is a side elevation of my improved plow. Fig. 2 is a plan view of the same. Figs. 3, 4, 5, 6, and 7 are detached views of certain parts thereof.

A represents the plow-beam, to which the frame B is secured by a bolt, *a*, passing up through the top of the frame and through the plow-beam. The opening *b* in the frame is curved forward at its upper end, for the purpose of throwing the bolt *a* farther forward, and thus decrease the leverage from the front end of the beam, and thereby

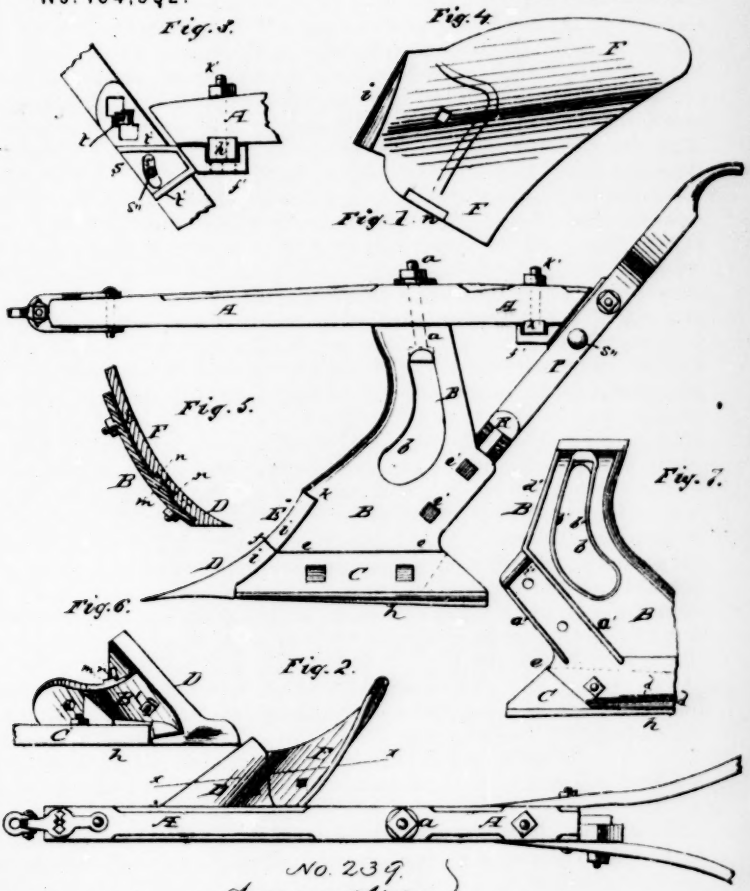
L. B. WHITE.

Plow.

201

No. 164,952.

Patented June 29, 1875.



No. 239.

Syracuse Chilled Plow Company v. Robinson et al.

ap 201

WITNESSES.

P. C. Dieterich

H. C. Scott

INVENTOR:

Lewis B. White

per C. H. Watson & Co.

ATTORNEYS.

11

2(

L

S

T

N
in
is
ot
sa
le
fic

u
m

p
a

b
b
fo
cr

lessen the liability of breaking the bolt. The side of the frame is formed with a horizontal shoulder, *e*, at a suitable height above the lower edge, and along said lower edge is formed an inwardly-projecting inclined and tapering flange, *d*, which is made slightly concave on its under surface. At the point of the frame B is formed a shoulder or abutment, *f*. The inside of the frame B is formed with flanges *b'* around the opening *b*, and also with two parallel flanges *a' a'*, and with a flange, *d'*, as shown in Fig. 7, to obtain the greatest amount of strength. C represents the land-side, which is made pointed at both ends, and provided on each side with a tapering flange, *h*, which commence from opposite ends and gradually run into the body of the land-side, said flanges being convex on their upper surfaces to fit against the concave flange *d* of the frame. When the land-side C is fastened to the frame its upper edge is against and flush with the shoulder *e*, its point against the abutment *f*, and the flange *h* on its inner side up against the flange *d* of the frame. As the outer side of the land-side becomes too much worn it can be reversed and put back in place, and one end of the flange on the lower part of the land-side is thicker than the other, so that when worn it is reversed. D represents the plow share or point, and E the mold-board. These are both at their inner edges constructed with a flange, *i*, to form a V-shaped groove, which fits over the edge of the frame, and the flange of the mold-board at its upper end interlocking with a shoulder, *k*, on the frame. When the share and mold-board are fastened in place they form one continuous curve from the point to the shoulder *k*, and at this shoulder on the frame is formed, so to say, an elbow, the upper end of the frame forming another curve. On the wing of the frame B is formed a rib, *m*, which comes directly at the junction of the share and mold-board, and fits in recesses *n*, made in their edges for that purpose. This rib acts as a guide in putting on the share and mold-board, and in drilling or reaming the bolt-holes therein. It also acts as a stop for the share and mold-board, so as to relieve the bolts which fasten the same from undue strain, and to prevent the twisting of either share or mold-board. This is of great importance, from the fact that both the share and mold-board are each fastened only by a single bolt.

It will be seen that in operation the flanges *i* of the share and mold-board protect the edge of the frame, and, as they project beyond the edge, they also protect the side of the frame.

P P represents the handles, the lower ends of which are laid between the flanges *a' a'* and fastened by bolts *e' e'*, the flanges holding the handles firmly in position and relieving the strain on the bolts. Between the frame and the handles is inserted a slotted wedge, R, to pass over the upper bolt, *e'*, and the outer side of this wedge is toothed, as shown in Fig. 1. Between the upper rear ends of the flanges *a' a'* is formed an edge, *i'*, which engages with the toothed wedge R, to hold the same and prevent its slipping. The object of this wedge is to adjust the handles, as required, more or less to either side. Between the handles P P, in rear of the beam A, is fastened a slotted and flanged casting, S, formed with a projection, *f'*, on its front edge. This projection is recessed on its upper

203

side, and provided with an elongated slot. On the under side, at the rear end of the beam A, is a block, *h'*, let into the beam, which block fits into the recess in the projection *f'*, said projection resting against the under side of the beam, as shown in Fig. 3. A bolt, *k'*, is then passed through (from underneath) the slotted projection, block, and beam, and fastened by a nut on top. The rear portion of the casting S forms a flanged extension between the handles, having a slot, *s'*, in the lower part, to allow the casting to move over the bolt *s''*. The upper portion is also slotted and provided with angular openings corresponding in form to the shape of the bolt-head, by which means the casting is adjusted and held in place. The casting is also provided with ribs *t'*, which holds one of the handles in proper position.

Having thus fully described my invention, what I claim as new, and desire to secure by letters patent, is—

1. The tapering concave flange *d*, formed on the lower edge of the frame B, in combination with the reversible double-pointed land-side C, provided with tapering flanges *h*, made thicker on one end than on the other, substantially as and for the purpose specified.

2. The frame B, provided with flanges *a' a'* and edge *i'*, in combination with the slotted and corrugated wedge B and handles P, all as and for the purpose herein specified.

3. The casting S, having recessed and slotted projection *f'*, flanges or ribs *t' t'*, slot *s''*, and slot for bolts *t*, in combination with handles P, beam A, and block *h*, all as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEWIS B. WHITE.

Witnesses:
C. H. WATSON.
X. C. SCOTT.

(Indorsed:) Filed June 26, 1888. W. S. Doolittle, clerk.

205 115,543.

UNITED STATES PATENT OFFICE.

ROBERT THEMAR and BRAND BROTHERS, of Sheboygan, Wisconsin.

Improvement in Subsoil-Plows.

Specification forming part of Letters Patent No. 115,543, dated May 30, 1871; antedated May 22, 1871.

To all whom it may concern:

Be it known that we, Robert Themar and Brand Brothers, of Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented a new and valuable improvement in subsoil-plows; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference

Defts. Exh Themar Patent. 204

C.D.K. N.P.v Spec.Ex. Feb. 14, '86.

ROBERT THEMAR & BRAND BROTHERS.

Improvement in Sub-Soil Plows.

No. 115,543. Patented May 30, 1871.

Fig. 1.

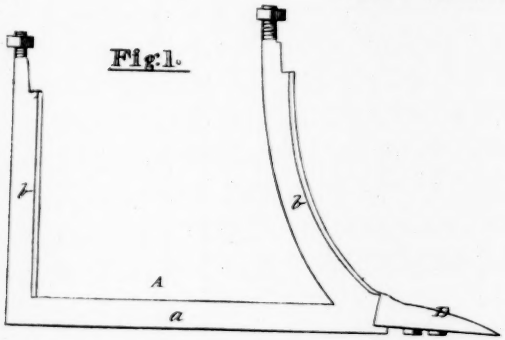


Fig. 2.

Fig. 3.

Fig. 4.

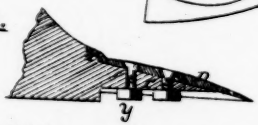


Fig. 5.

No 239
Syracuse Chilled Plow Company
vs.
Robinson et al
} p. 204

Witnesses.
Chas Kenyon.
Chas. Mann.

Inventor.
Robert Themar
Brandt Brothers.
Chipman & Fosmer & Le
Attorneys.

being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

(Here follows diagram marked p. 204.)

Figure 1 of the drawing is a side view of our invention. Fig. 2 is a horizontal section of the same. Figs. 3, 4, and 5 are details.

Our invention relates to an improvement in subsoil-plows; and consists in the formation of the convex steel point, and in the construction and novel arrangement of the connecting-stem, whereby it is adapted for subsoiling tenacious or clayey soil.

The letter A of the drawing designates the iron stem, consisting of the horizontal ground-bar *a* and the uprights or arms *b*, whereby the bar *a* is connected with the plow-beam. These arms *b* have their forward edges made sharp in order that they may pass readily through the hard soil. D represents the convex point, formed of steel, and curved from side to side and from heel to point in such a manner as to stir and break the subsoil below the furrow. The point D is designed to break the soil for the full width of the furrow above, but without turning it over. The under surface of the point is concave, and fitted, by means of a recess, *n*, to a shoulder *z*, in the front portion of the horizontal bar *a*. The point D is secured to the projecting toe *r* of the bar *a* by means of the bolts and nuts *s s*.

It will be observed that the lower edge of the bar *a* is in line with the forward end of the subsoiling point D, and serves to keep it steady and properly directed. It will also be observed that we form a recess, marked *y*, in the lower side of this bar *a*. This recess serves as a chamber to hold the nuts of the bolts by which the convex point is attached, and keep them from the ground.

Very little draft is required with this subsoil-plow in consequence of its form and the sharpened edges of the arms.

In consequence of the distance of the rear arm *b* from the forward arm, its attachment to the plow-beam is very secure.

The whole attachment is very light and strong, and is designed to serve an excellent purpose in tenacious or clayey soils where subsoiling is difficult on account of the heavy draft, and yet most important.

What we claim as our invention, and desire to secure by letters patent, is—

The subsoil attachment herein described for plow and wheel cultivators, consisting of the ground-bar *a*, front and rear connecting-arms *b b* with forward sharpened edges, recess *y*, and convex point D, when constructed and combined as and for the purpose specified, substantially as shown and described.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

ROBERT THEMAR.
BRAND BROTHERS.

Witnesses:
BERNARD MEYER.
WILLIAM WÖSSMURM.

(Indorsed:) Filed Sep. 25, 1888. W. S. Doolittle, clerk.

207 UNITED STATES PATENT OFFICE.

LEVI W. HALL, of Syracuse, New York.

Improvement in Plow-Points.

Specification forming part of Letters Patent No. 220,373, dated October 7, 1879; application filed August 29, 1879.

To all whom it may concern:

Be it known that I, Levi W. Hall, of Syracuse, Onondaga county, State of New York, have invented certain improvements in the construction and attachment of plow-points, of which the following is a specification.

Heretofore bosses, recesses, and projecting ribs and studs have been used upon the seats of plow-points and upon the face of the points corresponding thereto; but they are neither of the form nor purpose of my series of corrugations, by which invention I am enabled with less metal to give greater strength than by any device I now know.

My improvement in plow-points and attaching the same to the standard consists in providing the face of the standard, upon which the point is seated and rests, with a series of corrugations, and likewise corrugating the inner surface of the wing of the point, so as to correspond with and be a counterpart of the surface on which it rests, by which the parts are greatly strengthened and the point is securely and immovably fixed in place by a single bolt, as hereinafter described.

The following description of my improved plow-point and the manner of attaching it firmly to the standard, so as to be readily removed and securely affixed by a single screw-bolt, refers to the annexed drawings, in which—

(Here follows diagram marked p. 206.)

Figure 1 is an elevation of the lower part of the standard with the point removed, the place of the point thereon being indicated by the dotted lines *y*. Fig. 2 represents the inner or lower surface of the point, showing its counter form to its seat on the standard. Fig. 3 is a transverse sectional plane through the point and its seat, showing the interlocking of the corrugations that hold it immovably in place by the single bolt *c*.

The same letters of reference are used to indicate like parts in the several figures.

a is the lower end of the plow-standard, on the upper face of the wing of which, on the mold-board side, it is corrugated longitudinally and nearly horizontal, as clearly seen at *a'*.

A hole, *b*, is made through one of the projections or ribs *a'* of the corrugated surface for a bolt, *c*, to pass through.

The point *c* is made to exactly fit the seat on the standard, to which its under surface forms a counterpart, and having a hole

Defts. Exh. Hall Patent. 206

C.D.K. N.P.r Spec. Ex. Feb. 14, '88

L. W. HALL.

Plow-Point.

No. 220,373. Patented Oct. 7, 1879.

Fig 1.

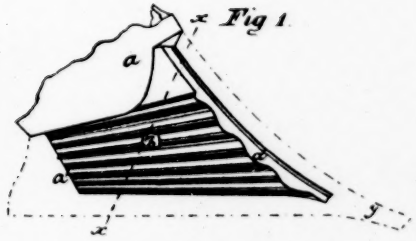
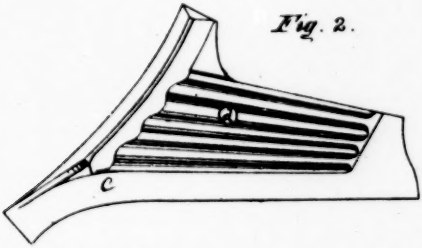
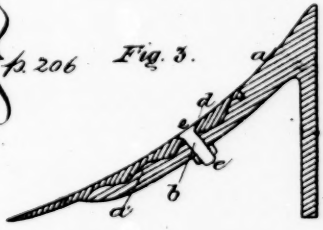


Fig. 2.



No 239.
Syracuse Chilled Plow Company
v.
Robinson et al.
} p. 206

Fig. 3.



Witnesses:
J. Greenough
F. B. Causey

Inventor:
Levi W. Hall

Defendants' Exh. Dennis Reissue.
C.D.K. N.P. & Spec. Ex. Feb. 14 '88.

P. Dennis.

Plow.

No. 1,515. Reissued Aug. 4, 1863.

Fig. 1.

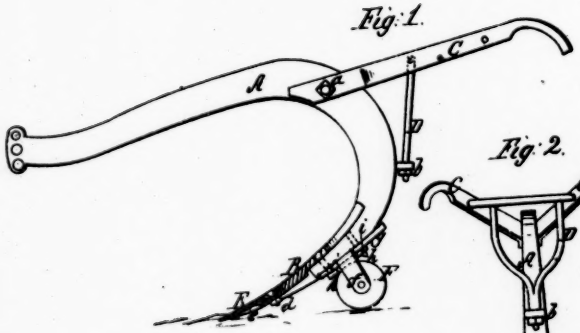
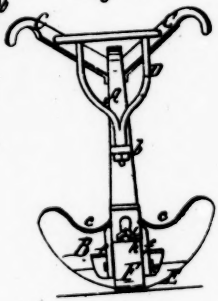
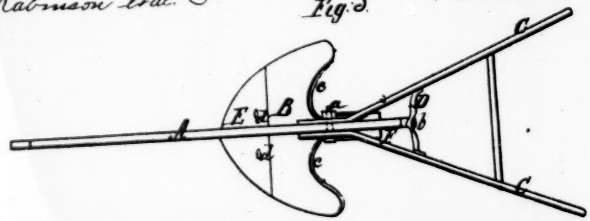


Fig. 2.



No. 239.
Syracuse Chilled Plow Company
v.
Robinson et al.
} p. 208

Fig. 3.



through it at *d*, opposite the one *b* in the standard between the projecting ribs of the corrugation, which serve as bosses for strengthening it on each side of it in the line of the breaking strain.

This form of point and standard-seat gives them increased strength and a firmer union without increasing the weight of metal, and combines them together in a way to resist varied strains the point is subject to in a convenient and perfect way, by which it can be readily removed and replaced by the use of the screw-bolt *e*, with its nut underneath the standard.

Having thus fully described my improvements in constructing and attaching plow-points, I claim—

1. The plow-point *c*, having a series of longitudinal corrugations, substantially as shown and described, whereby a firm connection is obtained and greater strength with less weight of metal.

2. The plow-point *c*, constructed as described, in combination with a standard or seat having corresponding corrugations, as and for the purpose set forth.

LEVI W. HALL.

Witnesses:
J. J. GREENOUGH.
J. P. MUNRO.

(Indorsed:) Filed Sept. 25, 1888. W. S. Doolittle, clerk.

209 UNITED STATES PATENT OFFICE.

PAUL DENNIS, of Bemus Heights, New York.

Improvement in Cultivators.

Specification forming part of Letters Patent No. 19412, dated February 23, 1858; Reissue No. 1515, dated August 4, 1863.

To all whom it may concern:

Be it known that I, Paul Dennis, of Bemus Heights, in the county of Saratoga and State of New York, have invented a new and improved shovel-plow; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

(Here follows diagram marked p. 208.)

Figure 1 is a side view of my invention; Fig. 2, a back view of the same; Fig. 3, a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in a peculiar manner of constructing or forming the upper edge of the mold-board with recesses, so that the earth, as the implement is drawn along, will pass over the top of the mold-board and drop into the furrow behind it and partially or wholly fill the same, thereby leaving the earth in a level and also in a loose, light, or friable state, permeable to air and moisture, and

at the same time preventing earth, sods, stones, &c., being cast against the growing plants by the mold-board—a contingency of frequent occurrence in using the ordinary plows.

The invention further consists in the employment or use of a gage applied to the implement in such a manner as to admit of the mold-board penetrating the soil at a greater or less distance, as may be desired.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a metallic bar, which is curved so that the front part will form the beam of the implement and the back part an inclined portion, to which the mold-board B is firmly attached. The form of the bar A is clearly shown in Fig. 1.

To the bar A, near the center of its curve or bend, the lower ends of handles C C are attached by a bolt, as shown at *a*. These handles are braced by a V-shaped support, D, the lower end of which is secured to the bar A, as shown at *b*.

The mold-board B is of shovel form, and is much like those usually made, with the exception that its upper edge or part is scalloped out so as to form a recess, *c*, at each side of the bar A, as shown clearly in Figs. 2 and 3, said recesses extending down nearly or about one-half the length of the mold-board. The mold-board may be constructed of malleable cast-iron.

E is the point or share, which is constructed of steel, the lower end being pointed and its sides slightly rounded or curved, so that the form of the mold-board and point or share, when connected together, will closely approximate to those which are cast in one piece, the recesses *c* being excepted. The point or share E may be attached to the mold-board B by bolts *d*, which are attached to the point or share and pass through a projecting plate, *e*, at the under side of the mold-board. (See Figs. 1 and 2.)

F is an adjustable metallic roller, which is attached to the bar A just back of the mold-board B. The axis of the roller F is fitted or has its bearings in arms *f f*, which project obliquely from a plate, *g*, said plate being slotted longitudinally, so that the bolts *h h*, which secure the mold-board to the bar, may pass through said slot, the bolts *h* having each a nut, *i*, on them, by screwing up which the plate *g*, and consequently the roller F, may be secured higher or lower, as desired.

From the above description it will be seen that the point or share E and mold-board B may be made to penetrate the soil at a greater or less depth, as may be desired, by adjusting the roller E and draft-chain, said roller serving as a gage or guide, and the draft-chain being adjusted at the end of the beam, so that the draft may aid the roller and the point or share be made to have a tendency to penetrate the soil or otherwise. This will be understood by referring to Fig. 1, in which it will be seen that by depressing or lowering the roller on the bar the mold-board will be less inclined, and consequently, if the draft-chain or whiffle-tree be properly adjusted at the end of the beam, the point or share will have a greater tendency to penetrate the earth than if the roller were higher up on the

bar, the roller always bearing upon the earth. The mold-
210 board B does not cast the earth from either side, as usual; but the earth, in consequence of the recesses *c c*, will pass over the top of the mold-board and drop behind it, so that no furrow will be formed or left behind the mold-board; but the soil will be left in a loose light state, permeable to air and moisture, and all grass, weeds, roots, and the like perfectly cut up. The mold-board by operating in this manner does not of course cast earth, sods, or stones upon the growing plants, as is frequently the case in using the ordinary shovel-plows, which cast the earth from either side of them. This is an important feature of the invention.

The point or share E also, in consequence of being made separate of steel and attached to the mold-board, may be readily detached and sharpened, and when much worn a new one may be attached to the mold-board. The plow is therefore not only rendered far more durable, but it may always be kept in perfect order, for the mold-board will last an indefinite period of time, it not being subjected to much wear, and the plow will always be in order, provided the point or share is kept in proper condition. By my improvement this can be done; but it cannot be done when the mold-board and share are cast in one piece. The ordinary shovel-plows cannot be regulated by the draft-chain so as to regulate the depth of the furrow, for they have no guide, the point or share merely penetrating the soil. The roller F in my improvement diminishes friction and serves as a more perfect guide than the land-side of ordinary plows.

Having thus described my invention, I wish it distinctly understood that I do not claim broadly the idea of passing a portion of the earth over the mold-board into the furrow behind, as I am aware that this has before been done; neither do I claim applying a movable mold-board to one of the outer edges of the share, as described in an application of J. Drummond, rejected October 25, 1844; neither do I claim the use of projecting blades at the outer ends of the share, as described in the patent of B. Langdon, granted June 22, 1842, and others; but,

Having thus described my invention, what I claim as new therein, and desire to secure by letters patent, is—

1. The inclined shovel mold-board B, formed and mounted substantially as described, and constructed highest at its outer edges, so as to form on each side of the standard A a recess, *c*, through which recesses a portion of the earth may, after rising upon the mold-board, descend into the furrow in the rear of the plow.

2. The combination, with the beam A and mold-board B, of the adjustable wheel F, arranged and operating substantially as and for the purposes specified.

PAUL DENNIS.

Witnesses:
HENRY W. DENNIS.
JOSEPH A. KING.

(Indorsed:) Filed Sep. 25, 1888. W. S. Doolittle, clerk.
16—239

212 UNITED STATES PATENT OFFICE.

RICHARD B. CHENOWETH, of Baltimore, Maryland.

Improvement in Plows.

Specification forming part of letters patent dated March 17, 1834.

To all whom it may concern:

Be it known that I, Richard B. Chenoweth, of the city of Baltimore and State of Maryland, have invented a new and useful improvement in plows; and I do hereby declare that the following is a full and exact description of the construction and operation of the said plow as improved by me.

The improvement consists in the form of the share and the manner of fastening it to the mold-board.

In a former patent I claimed the plan of fastening the share on the top of the mold-board, similar to my present mode; but the share I then used would not admit of a reverse application. My share now embraces both the share and point in one piece. Either side is used up or either end forward, and the wear produces the proper sharpening when the share is turned over. By means of the dovetail fit, as seen at 3 3 in the drawing, where the edge of a share has a hold under a part of the mold-board, one bolt in the middle, as at 4, will hold the share sufficiently firm and secure and render the work both simple and economical.

(Here follows diagram marked p. 211.)

In the drawing the edge of the share and the points are represented as not on a line with each other, as will be seen by the dotted lines; but the edge and points of the share may be constructed so as to be on the same line. I claim the form of the share as embracing both share and points, and susceptible of a reverse application and self-sharpening by the reversion of such application, with the manner of fastening the share on the mold-board, as represented in the drawing.

I do not mean to confine myself to one precise mode of securing the share to the mold-board, as seen in the drawing, for I am aware that variations of form may be used which may equally well answer the purpose; but

I distinctly claim—

The application of the share with two points, and which admits of a reverse application to the mold-board, and which by means of reversing the application sharpens itself by use.

RICHARD B. CHENOWETH.

Witnesses:
JONATHAN PARKER.
BENJM. GORMAN.

(Indorsed:) Filed Sept. 25, 1888. W. S. Doolittle, clerk.

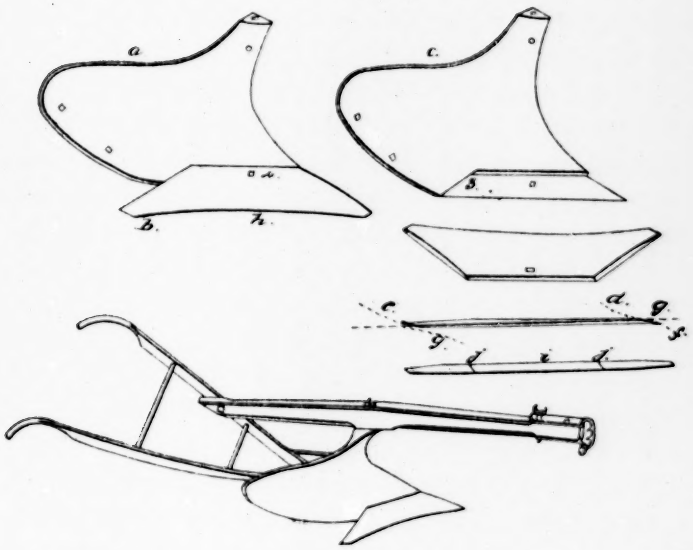
Defts Exh. Chenoweth Patent.
C.D K. N.P. v Spec. Ex. Feb. 14, '88

R. B. CHENOWETH.

Plow.

No. 239
Syracuse Chilled Plow Company v. Robinson et al } p. 211

Patented Mar. 17, 1884.



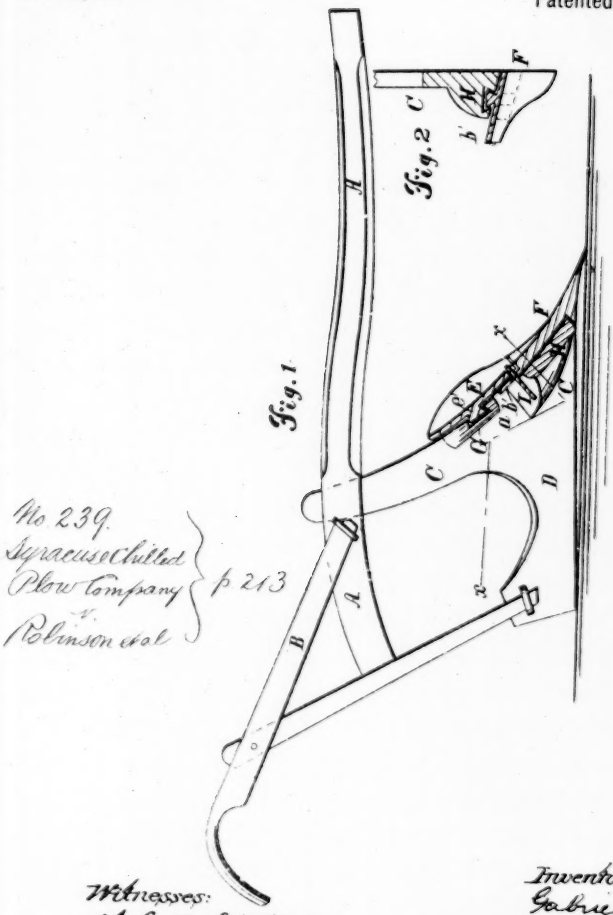
Defts. Exh. Utley Patent. 213

C.D.K. N.P. & Spec. Ex. Feb 14 '88

G. UTLEY.

Plow.

No. 78,339. Patented May 26, 1868.



No 239.
Syracuse Chilled Plow Company } p 213
v.
Robinson et al

Witnesses:
H. B. Ashley
J. A. Fraser

Inventor:
Gabriel Utley
By Munn & Co
attorneys

214 UNITED STATES PATENT OFFICE.

GABRIEL UTLEY, of Chapel Hill, North Carolina.

Letters Patent No. 78339, dated May 26, 1868.

Improvement in Ploughs.

The schedule referred to in these letters patent and making part of the same.

To all whom it may concern:

Be it known that I, Gabriel Utley, of Chapel Hill, in the county of Orange, and State of North Carolina, have invented a new and useful improvement in ploughs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

(Here follows diagram marked p. 213.)

Figure 1 is a side view of my improved plough, part being broken away, to show the construction.

Figure 2 is a detail sectional view of the same, taken through the line *x x*, Fig. 1.

Similar letters of reference indicate like parts.

My invention has for its object to furnish an improved plough, so constructed and arranged that the mould-board and point may both be detached from the plough when desired, and so that the said parts may not be weakened by having bolt-holes formed in them; and it consists in the construction of the mould-board and point, and of the parts by which they are secured to the frame of the plough.

A is the plough-beam; B are the handles; C is the standard; D is the land-side; E is the mould-board, and F is the point.

The mould-board E is formed with a dove-tailed tongue, *e'*, upon its lower side, fitting into a dove-tailed groove in the forward side of the arm G, cast solid upon the side of the standard C, the tongue *e'* and groove in the arm G running at right angles with the plane of the land-side D of the plough, as shown in Fig. 1.

The point F is also formed with a dove-tailed tongue, *b'*, upon its under side, fitting into a dove-tailed groove in the forward side of the arm H, cast solid upon the side of the lower part of the standard C, said tongue extending up in the rear of the lower part of the mould-board E, as shown in Fig. 1, to which it is secured by a pin, I, passing through the said mould-board and through the upper part of the said tongue.

The pin I may be secured in place, and prevented from working out, by a key passed through its inner end, or by other convenient means.

The dove-tailed tongue of the point F, and the dove-tailed tongue of the mould-board E, run at right angles to each other, so that, when the said point and mould-board are secured to each other by the pin I, each may bind the other in place.

Having thus described my invention, I claim as new, and desire to secure by letters patent—

1. Securing the mould-board E to the plough by means of the dove-tailed tongue e', formed upon its inner side, fitting into a dove-tailed groove formed in the forward side of the arm G, cast solid upon the side of the standard C, substantially as herein shown and described, and for the purpose set forth.

2. Securing the point F to the plough by means of the dove-tailed tongue b', formed upon its under side, and fitting into a dove-tailed groove formed in the forward side of the arm H, cast solid upon the side of the lower part of the standard C, substantially as herein shown and described, and for the purpose set forth.

3. Connecting the mould-board E and point F to each other by means of the pin I, passing through the lower part of the said mould-board E, and through the extended end of the tongue b', substantially as herein shown and described, and for the purpose set forth.

4. The combination of the tongued point F, tongued mould-board E, grooved arms H and G, and standard C, with each other, substantially as herein shown and described, and for the purpose set forth.

GABRIEL UTLEY.

Witnesses:
MATTHEW KING.
CHAS. E. WATSON.

(Indorsed:) Filed Sept. 25, 1888. W. S. Doolittle, cl'k.

216 UNITED STATES PATENT OFFICE.

THOMAS E. C. BRINLY, of Louisville, Kentucky.

Improvement in Plows.

Specification forming part of Letters Patent No. 140,004, dated June 17, 1873; application filed April 7, 1873.

To all whom it may concern:

Be it known that I, Thomas E. C. Brinly, of Louisville, in the county of Jefferson and State of Kentucky, have invented a certain improvement in plows, of which the following is a specification:

The nature of my invention consists in certain novel means for so combining the mold-board of a plow with the standard and the share that it will be held firmly in place without the use of bolts or clamps of any description.

(Here follows diagram marked p. 215.)

Deft. Exh. Brinly Patent—

C.D.K. N.P. & Spec. Ex. Feb. 14. '88

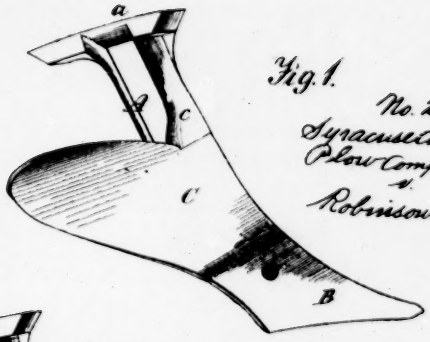
215

T. E. C. BRINLY.

Plows.

No. 140,004. Patented June 17. 1873.

Fig. 1.



No. 239.
Syracuse Chilled Plow Company
v.
Robinson et al.
} p. 215

Fig. 2.

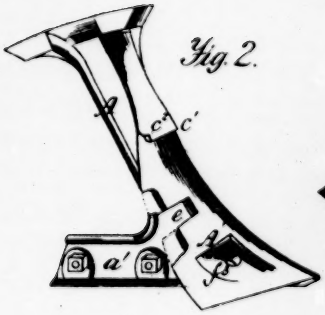


Fig. 3.

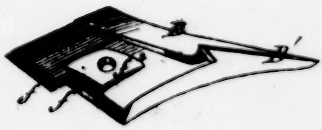


Fig. 4.

Witnesses.
A. Ruppert
Wilmer Bradford

T. E. C. Brinly
Inventor.
D. P. Holloway & Co
Attys

Figure 1 is a perspective view of the standard, share, and mold-board of a plow, constructed according to my invention. Fig. 2 is a perspective view of the standard detached. Fig. 3 illustrates in perspective the back side of the share. Fig. 4 illustrates in perspective the rear side of the mold-board.

The same letters of reference are used in all the figures in the designation of identical parts.

The standard A, made preferably of cast-iron, is constructed with the usual head *a*, for securing it to the plow-beam; the heel *a'*, for attachment upon its outer side of the steel land-side; and the curved obliquely-projecting flange A', forming a bearing for the share B, and the mold-board C. At the upper end of the flange A', a lug or projection *c* is formed, the lower sharply-defined edge *c'* of which is beveled, and has an offset at c^2, as clearly shown in Fig. 2. The mold-board has a beveled edge at *b*, and an offset at *b'*, snugly fitting under and against the projection *c* of the standard, as seen in Fig. 1. A dovetailed slot, *e*, is formed in the outer side of the flange A', at a point about midway of the mold-board, upon the back of which is made a corresponding dovetailed lug, *d*, which enters the slot *e*, and together with the offset *b'*, bearing against the offset c^2, prevents the mold-board from being moved horizontally beyond the land-side edge of the standard. The adjoining edges of the share and mold-board are defined by angular lines, as at *f* and *g*, and are beveled so that the share will lap over the mold-board at their junction. The offset *f'*, in the angular edge of the share faces the standard, and the offset *g'*, of the mold-board hooking behind it, prevents the horizontal movement of the latter away from the land-side. The share is provided with the usual point B', which hooks onto the toe of the standard, and is fastened by a single bolt, b^2, to the flange A. A boss, f^2, is also formed upon the under side of the share, which fits into a corresponding recess in the flange A', of the standard, and steadies the share.

In connecting the parts described together, the mold-board must first be slipped into place on the standard, after which the share is attached, which holds all the parts rigidly together.

What I claim as my invention, and desire to secure by letters patent, is—

The mold-board C *b b' g g' d*, in combination with the standard A *c* c^1 c^2 *e* f^3, and the share B *f* f^1 f^2, and bolt b^2, all constructed and arranged substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

T. E. C. BRINLY.

Witnesses:
JAMES M. WELLS.
W. REYNOLDS.

(Indorsed:) Filed Sep. 25, 1888. W. S. Doolittle, clerk.

217 DEF'TS' EX. WATSON LETTER, JULY 17, 1875. (C. D. K., N. P. & Spec. Ex., Feb. 14, '88.)

C. H. Watson & Co., counselors & attorneys at law; solicitors of American and foreign patents. Office No. 607 Seventh street, opposite U. S. Patent Office. Attention devoted exclusively to patents before the United States Patent Office, the courts of the several States, the circuit and Supreme Courts of the United States. Special attention given to matters of infringement, interference, extension, and to rejected cases.

Post-office address, box 40, Washington, D. C.

WASHINGTON, D. C., *July 17th*, 1875.

L. B. White, Esq., care S. March & Co., Norfolk, Va.

DEAR SIR: Yours of the 15th inst. came duly to hand, and your surprise upon receipt of your patents could not have been as great as my surprise upon receipt of your letter. Take the patent 164,951. The claims—1st is the same broad claim put in when you was here, the second the same, and the 3rd changed in form to include the projection along the base. The claim to the washers or plates the ex'r would not allow. Patent No. 164,952: The points are not allowed, except those which we thought substantially shown in your former patents, and should have been covered there if anywhere. I spoke to you, you will doubtless remember, about an appeal, and you said you did not think advisable; at least such is my distinct remembrance of the conversation, and I had it fixed in my
218 mind that all they would not allow you would claim in a reissue of your former patent. I enclose you official letters upon the subject of official action. So much as to the actions; and now, Mr. White, as to my action, for which I alone am responsible; and, so far as that is concerned, I believe from your personal acquaintance you will accord me the honor of being, so far as I am capable, gentlemanly, and I assure you that I had no motive other than to work for your interest in every particular. Reason will tell you this, as I wish to secure the good opinion of my clients in all cases, as upon them my business depends. I am not in league with any plow men, and could have no possible reason to do you an injury or in any manner to give up what you are entitled to. Further, I believe I understand the patentability of agricultural implements as well as any one in the country, as I have given so much time to them, and I also firmly believe I have obtained every claim possible, in view of the references; and, further, if you will submit the patents to any reliable att'y, and he will say, after examining all the references, I have left out any claim you ought to have, I will put the cases in the Patent Office for reissue at my own expense. If you come this way call and see me, and we will go over these cases together, and I think you will agree with me. I believe the point- you want are in your old patent and cannot be got in any other place. I have endeavored to do what is right, and I trust

you will give me the credit of that, whatever you may think of my ability so to do.

Very truly yours, C. H. WATSON.

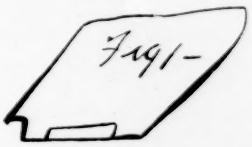
Indorsed: Filed Jun- 26, 1888. W. S. Doolittle, clerk.

219 DEF'TS' EXH. WHITE LETTER, JULY 24, 1875. (C. D. K., N. P. & Spec. Ex., Feb. 14, '88.)

JULY 24, '5.

Chas. T. Palmer, Esq., Richmond Va.

DEAR SIR: On the 13th of July we ordered fifty sets of Atlas castings and one or two hundred extra points, but to this writing none of the order has been filled. The demand for the "Atlas" castings is very large, and unless you can be more prompt in filling orders we will be subjected to great inconvenience in supplying our friends. On the under side of molds for Atlas plow where they join the point you will discover a recess that engaged originally with a flange on wing of standard. The flange on wing of standard is too wide to come in position. Please make this recess in mold $\frac{1}{8}$ larger on each end & $\frac{1}{8}$ full—deeper perpendicularly. See sketch. Dark lines at 4, in Fig. 1,



show the recess. Increase in size as above & in the direction as shown by red line in Fig 1. We have about 100 standards that will require such molds as are mentioned above. You will then send us in addition to our order now with you:

50 No. 1 A molds, cut out as above.
50 " 2 " molds, " " " "
50 " 2 " hands.

Y'rs truly, —— ——.

Indorsed: Filed Jun- 26, 1888. W. S. Doolittle, clerk.

220 *Stipulation as to Exhibits.*

In the Circuit Court of the United States for the Northern District of New York.

SYRACUSE CHILLED PLOW COMPANY *vs.* J. S. ROBINSON and An. } In Equity. No. 5641.

It is hereby stipulated by and between the parties hereto that the clerk, in making transcript of record on appeal herein, may omit therefrom mechanical exhibits filed by complainant and defendants, and that the clerk may, when so requested by either party, trans-

mit the original mechanical exhibits to the clerk of the Supreme Court for use on the argument of the appeal in this suit in said Supreme Court.

Sept. 20, '88.

E. C. WRIGHT,
Solic'r for Appl't & Compl't.
GEO. B. SELDEN,
Def'ts' Sol'r.

Indorsed: Stipulation as to exhibits on appeal. Filed Sep. 20, 1888. W. S. Doolittle, clerk.

221 *Decision.*

United States Circuit Court, Northern District of New York.

THE SYRACUSE CHILLED PLOW COMPANY }
vs.
JOHN S. ROBINSON and Another. }

J. J. Greenough and E. C. Wright, for the complainant; George B. Selden, for the defendants.

COXE, *J.:*

This is an equity action for infringement based upon letters patent No. 231,810, granted August 31, 1880, to James L. Judd for an improvement in plows.

The object of the patentee was to strengthen the union of the parts of the plow and save labor in grinding their edges at the joints. The second claim, alone alleged to be infringed, is as follows:

"2. The combination of the ribs *a* and chamfered edges *b* in plow castings, substantially as and for the purposes described."

The defenses are want of novelty and non-infringement. The patent granted to Lewis B. White June 29, 1875, if not a complete anticipation, so limits the theatre of invention that the combination in question is devoid of all pretense of patentable novelty.

In his specification White says: "On the wing of the frame B is formed a rib, *m* (Judd's rib *a*), which comes directly at the junction of the share and mold-board and fits in recesses *n* (chamfered edges *b*) made in their edges for that purpose."

222 It also appears that White presented a claim for the combination of the rib on the standard with the share and mold-board, each being provided with corresponding recesses. This is almost the identical combination of Judd's second claim. White's claim was rejected by the examiners upon reference to prior patents and was erased by his attorneys. It is true that differences in size and shape may be easily pointed out, but the functions performed by the Judd and White combinations are the same. Judd accomplishes no new result, and his departure from White in making the ribs and grooves larger, if an improvement, was one which a skilled mechanic would readily make. The idea, so far as the two men are

concerned, was White's. After having conceived it he might with perfect safety have requested Judd, as a skilled workman, to embody it in practical form, as shown in either patent. The invention, if there be one, should be credited to White. He who asserts that Judd is entitled to be considered an inventor because, without new result, he enlarged and rounded the edges of White's angular rib and corresponding recesses is unmindful of the trend of modern decisions. It was a mere change of form and nothing else.

Other evidence was introduced upon the question of novelty, but it is unnecessary to consider it, as it is thought there is no answer to the White reference.

As to infringement. The specification and drawings describe and show a rib, *a*, not only to fit the chamfered edge of the point, but also a rib, *a*, to fit the chamfered edge of the plate on the land side of the plow. The defendants insist that the claim, being in the plural, must be construed to cover the rib and edge both on
223 the land side and the mold-board side of the plow. As the defendants, concededly, do not use the former, it is insisted that they do not infringe. Although there is apparent force in this contention, it is unnecessary to pass upon it, for the reason that even upon the complainant's contruction there is no infringement. Defendants have sold plow points only. This, it is alleged, makes them contributory infringers within the doctrine of Wallace *v.* Holmes, 9 Blatch., 65. But the defendants' point does not have the chamfered edge of the patent. Webster defines a chamfer to be "a small gutter or furrow, * * * a groove; a slope or bevel produced by cutting off the edge of anything originally right-angled." That the patentee so understood it is clearly demonstrated by reference to his drawings and the plows made by the complainant under the patent. These show a clearly defined groove made to fit the rib. The point sold by the defendants has a thin edge at the joint, but the slope toward the joint is hardly more perceptible than in many other plow points, and cannot, except by a very constrained construction, be regarded as the chamfered edge of the patent.

Again, it appears that though the defendants' point will fit the Judd plow it will also fit the old-style (1878) plow. It was also proved that all plow points wear out and require frequent replacement. It is, therefore, exceedingly doubtful, to say the least, whether, in any circumstances, infringement can be sustained in view of the following authorities:

Wilson *v.* Simpson, 9 How., 109; Saxe *v.* Hammond, 1 Holmes, 456; Chaffee *v.* The Boston Belting Co., 22 How., 217–223; Snyder *v.* Bunnell, 29 Fed. Rep., 47; Gottfried *v.* Seipp
224 Brewing Co., 8 Fed. Rep., 322.

The bill should be dismissed with costs.

Indorsed: Decision. Coxe, J. Filed Jul- 10, 1888. W. S. Doolittle, clerk.

225 *Appeal.*

U. S. Circuit Court, Northern District of New York.

THE SYRACUSE CHILLED PLOW COMPANY
vs.
J. S. ROBINSON & E. C. ROBINSON.

To the honorable the Supreme Court of the United States:

The appeal of the above-named plaintiff and appellant respectfully shows to this court—

That on or about the 7th day of July, 1887, the above-named complainant filed his bill in the circuit court of the United States for the northern district of New York against the above-named defendants, alleging, in substance, the issue to one James L. Judd of certain letters patent numbered 231,810 and the transfer of the same by several *mien* assignments to this plaintiff; and—

Further, that the defendant-, in disregard of the rights acquired by plaintiff in said letters patent, had for some time manufactured and sold and were still manufacturing and selling plow points and parts of plows containing the device mentioned and described in said patent and praying that defendant- be perpetually enjoined from making and selling such patented combination or contrivance, and that there might be an accounting for all sales, &c., of said patent.

226 That the defendant- thereafter answered, denying the infringement and alleging that plaintiff's patent had been anticipated by sundry former contrivances, and alleging also that the plaintiff's patent was devoid of worth and that defendant- had a perfect right to make and sell plow points or plow attachments that contained substantially the devices contained in plaintiff's patent.

That plaintiff thereafter filed and served replication in the usual form.

That thereafter testimony was duly and usually taken and finally closed, and an argument duly had at Canandaigua circuit court in June, 1888; that on July 17th, 1888, a final decree was made and pronounced in the case, wherein it was, in substance, adjudged and decreed that the complaint of plaintiff be dismissed for the reason that a contrivance of one White anticipated the patent of said Judd and that the contrivance of said defendant- did not infringe on the patent of said Judd, and for other reasons, with costs.

Wherefore this appellant appeals from the whole of said decree of said circuit court of the United States and respectfully prays that decree of said circuit court and that the bill, answer, pleading, depositions, evidence, and proceedings in the said case may be sent to the Supreme Court of the United States without delay, and that the Supreme Court will proceed to hear the said cause anew,

227 and that the decree of the said circuit court and every part

thereof may be reversed, and that such decree may be made as to said Supreme Court may seem just.

Dated Sept. 11, 1888.

SYRACUSE CHILLED PLOW COMPANY.
E. C. WRIGHT,
Counsel for Compl't, Syracuse, N. Y.

To Geo. B. Selden, Esq., att'y for def't.

Indorsed: Appeal. The within appeal is allowed this 12th day of Sept., 1888. Wm. J. Wallace. Filed Sep. 17, 1888. W. S. Doolittle, clerk.

228 *Bond.*

Know all men by these presents that we, Harry Wiard and A. C. Chase, as sureties, are held and firmly bound unto J. S. Robinson and E. C. Robinson for the payment of the sums and the performance of the act hereinafter stated, and for which payment and performance to be made and done we bind ourselves, our heirs and personal representatives.

Sealed with our seals and dated this 11th day of September, 1888.

Whereas the said J. S. Robinson and E. C. Robinson recovered a judgement in an action in the United States court against the Syracuse Chilled Plow Company dismissing the complaint of the said Syracuse Chilled Plow Company with costs, and the said costs having been adjusted at $330.89, and the said chilled-plow company, feeling aggrieved, desires to appeal to the Supreme Court of the United States from the said decree: Now, therefore, we, the above-named sureties, are hereby jointly and severally bound that the appellant shall prosecute his writ or appeal to effect, and if it fail to make its plea good it shall answer all damages and costs that may be awarded against it on this appeal in the said Supreme Court.

Witness our hands and seals the day and year above written.

HARRY WIARD. [L. S.]
A. C. CHASE. [L. S.]

229 ONONDAGA COUNTY, *ss:*

On this 11th day of September, 1888, before me personally appeared Harry Wiard and A. C. Chase, to me known to be the same persons described in and who executed the foregoing bond, and severally acknowledged the execution thereof.

JAMES MANNING,
Notary Public, Onon. Co., N. Y.

ONONDAGA COUNTY, *ss:*

Harry Wiard and A. C. Chase, being severally duly sworn, say and each for himself says that he is a resident and freeholder within the city of Syracuse, and is worth the sum of five thousand ($5,000) dollars over and above all debts and liabilities incurred by

him and exclusive of property exempt by law from levy and sale under an execution.

HARRY WIARD.
A. C. CHASE.

Subscribed and sworn to before me this 11th day of September, 1888.

JAMES MANNING,
[L. S.] *Notary Public, Onon. Co., N. Y.*

(Indorsed:) Bond on appeal. The within bond is accepted and approved as to form and sufficiency. Sept. 12, '88. Wm. J. Wallace. Filed Sep. 17, 1888. W. S. Doolittle, clerk.

230 *Citation.*

By the Hon. W. J. Wallace, one of the justices of the U. S. circuit court for the northern district of New York.

To J. S. Robinson and E. C. Robinson and to Geo. B. Selden, their solicitor:

Whereas the Syracuse Chilled Plow Company has lately appealed to the Supreme Court from a decree lately rendered in the circuit court of the United States in and for the northern district of New York, made in favor of J. S. & E. C. Robinson, and has filed the security required by law, you are therefore hereby cited to appear before the said Supreme Court, at the city of Washington, on the 2nd Monday of October, 1888, to do and receive what may there be appointed to be done in the premises.

Given under my hand, at the city of Syracuse, in the northern district of New York, this 12th day of September, 1888.

WM. J. WALLACE.

STATE OF NEW YORK, } ss:
County of Monroe, }

George L. Smith, being duly sworn, says he is over 21 years of age; that on the 19th day of September, 1888, at No. 54 Arcade bl'k, in Rochester, N. Y., he personally served the citation, of which within is a copy, on Mr. Geo. B. Selden, the solicitor for defendants herein, by delivering to & leaving with him a true copy thereof.

GEORGE L. SMITH.

Subscribed & sworn to before me Sept. 19, '88.

A. L. FOREMAN, *Com. Deeds.*

Indorsed: Citation. Filed Sep. 17, 1888. W. S. Doolittle, clerk.

231 UNITED STATES OF AMERICA, } ss:
Northern District of New York, }

I, William S. Doolittle, clerk of the circuit court of the United States of America for the northern district of New York, in the second circuit, do hereby certify that the foregoing pages, numbered

from 1 to 230, inclusive, contain a true and complete transcript of the record and proceedings had in said court in the case of The Syracuse Chilled Plow Company *vs.* J. S. Robinson and E. C. Robinson, as the same remain of record and on file in said office.

Seal of the U. S. Circuit Court, Northern District, N. Y.

In testimony whereof I have caused the seal of the said court to be hereunto affixed, at the city of Utica, in the northern district of New York, in the second circuit, this twenty-ninth day of September, in the year of our Lord one thousand eight hundred and eighty-eight, and of the Independence of the said United States the one hundred and thirteenth.

W. S. DOOLITTLE, *Clerk.*

Endorsed on cover: N. New York C. C. U. S. No. 239. The Syracuse Chilled Plow Company, appellant, *vs.* J. S. Robinson and E. C. Robinson. Filed October 13, 1888.

MAR 19 1892
JAMES H. McKENNEY
Cl...

SUPREME COURT

OF THE

UNITED STATES.

OCTOBER TERM, 1891.

SYRACUSE CHILLED PLOW CO.,

Appellant,

against

J. S. & E. C. ROBINSON,

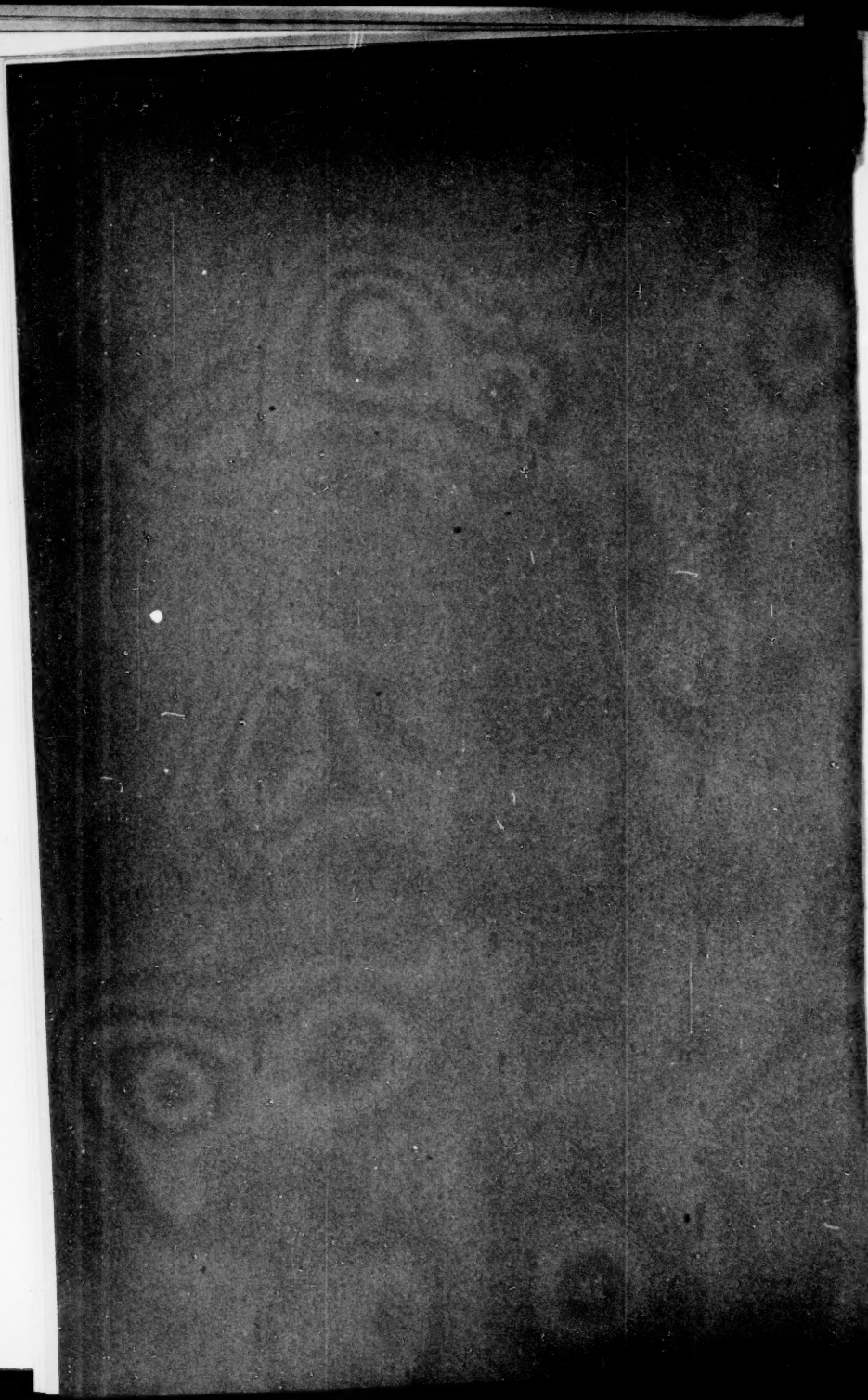
Appellees.

Brief for Appellees.

Appeal from the Circuit Court of the United States for the Northern District of New York, from a decree dismissing the Complainant's Bill.

THEODORE BACON,
Counsel for Appellees,
Rochester, N. Y.

ROCHESTER, N. Y.
SUNDAY HERALD PRINTING COMPANY.
1891



SUPREME COURT

OF THE

United States.

October Term, 1891.

SYRACUSE CHILLED PLOW CO.,
Appellant,
against
J. S. & E. C. ROBINSON,
Appellees.

Appeal from the Circuit Court of the United States for the Northern District of New York, from a decree dismissing the Complainant's Bill.

BRIEF FOR APPELLEES.

This is a suit in equity begun to restrain the alleged infringement of letters patent No. 231,810, granted on the application of James L. Judd, August 31, 1880, for "Improvement in Plows."

The bill of complaint was dismissed July 10, 1888.

Infringement was charged of the second claim of the Judd patent, which reads as follows :

"2. The combination of the RIBS *a* and chamfered EDGES *b* in plow castings, substantially as and for the purposes specified."

The defendants in the Court below contended:

1. That the second claim of the Judd patent was anticipated by the patent of White, No. 164,952, issued June 29, 1875, and is therefore void.

2. That they had not infringed, because they had not sold any plow-castings having "ribs *a*."

3. That they had not infringed, because they had sold plow-points only, and their points did not have the chamfered edges of the patent.

Each of these positions was sustained by Judge Cox in his opinion, citing Wilson vs. Simpson, 9 How., 109; Saxe vs. Hammond, 1 Holmes, 456; Chaffee vs. Belting Co., 22 How., 217, 223; Snyder vs. Bunnell, 29 Fed. Rep. 47; Gottfried vs. Brewing Co., 8 Fed. Rep., 322.

The appeal should be dismissed with costs.

THEODORE BACON,
Counsel for Appellees.
Rochester, N. Y.